# Final Report for EnergySmart Jobs

Prime Contractor Name: Portland Energy Conservation, Inc.

Contract Agreement Number: 400-09-014

Contract Term (reporting period): June 30, 2010 to April 30, 2012

Project Manager: Robert Bitman

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# Section 1: Executive Summary

**Program Background and Approach:**

The EnergySmart Jobs Program ("ESJ" or "Program") had three principal goals: job creation and economic stimulus, energy savings through adoption of efficiency technologies, and market transformation – catalyzation of lasting effects spurred on by Program activities.

The Program also had the objective of facilitating broad reach and access: geographic coverage across California, inclusiveness of customers adopting efficiency measures, numbers of contractors involved in installation activity, and involvement of new entrants into the energy efficiency workforce.

In order to achieve these diverse objectives, the Program's essential approach was to engage sub-contractors and establish strategic partnerships designed to provide comprehensive capabilities required within the Program team, the necessary technological infrastructure, and Participants able to perform installations and offer financial leverage to optimize the Program's reach.

The Program also chose energy efficiency measures that were well-suited to support its established goals. Specifically, measures chosen were widely applicable and desirable to a broad array of businesses, relatively inexpensive, and not schedule-intensive to install. An additional consideration was that the upgrades possess aspects of field work well-suited to entry level workforce skills.

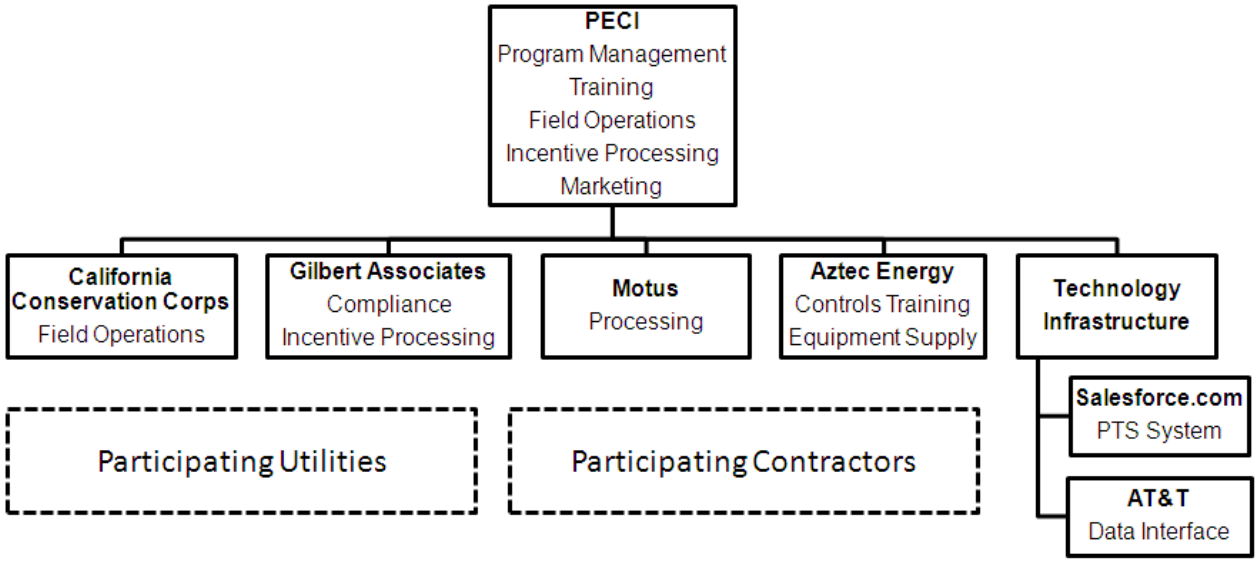
As implementation began, the Program coordinated with evaluation experts to prepare a Logic Model and supporting table of explanation. The model documents Programs activities, objectives and outcomes and was useful for Program Management to evaluate priority inputs and outputs as well as data tracking methods. The Contract Manager, Program evaluators and other stakeholders ultimately found the tool a convenient diagram of the components and goals of the Program. The Logic Model and supporting table of information are both submitted with this report as appendixes.

A summary of the Program approach follows:

- Provide training to California Conservation Corps ("CCC") energy efficiency surveyors and Participating Contractors on energy efficiency and how to engage in their work under the auspices of the Program
- Visit sites across the state of California to gather data relevant in identifying efficiency opportunities, recruit store owners to pursue retrofits, and install basic no-cost measures on the spot
- Facilitate installation of energy efficiency measures by qualified contractors by providing them access to identified opportunities and financial incentives to support project work
- Verify that projects were completed, process and remit incentive payments to customers or contractors
- Track overall pipeline of projects and report on various metrics including energy savings

**Program Organization:**

An overview graphic and description of the Program organization follows:




**PECI, Inc. ("PECI")** was the prime contractor with overall responsibility for managing the Program. PECI's key activities included:

- Overall Program design, administration, and management
- Recruitment, management, and coordination of subcontractors and participants
- Design, customization, and deployment of technology infrastructure
- Adherence to compliance requirements
- Training and field coordination of the CCC and Participating Contractors
- Verification of installations and custom measurement of savings for sample projects
- Incentive processing
- Program marketing

PECI engaged key sub-contractors and suppliers to augment the Program team by offering specialized capabilities as well as flex capacity to address peaks in work-load cost-effectively. These entities and their key activities are listed below.

**The California Conservation Corps ("CCC"):**

The California Conservation Corps was the main field engine for the Program, providing cost-effective coverage of the state of California with a workforce well-suited to supporting key aspects of the field operations, including:

- Establishing six survey teams strategically located to provide a broad coverage of the state
- Hiring and assigning Surveyors to teams upon completion of required Program training
- Providing administrative and logistical infrastructure to support the teams' day to day operations
- Collecting data at customer locations
- Recruiting customers to participate in the Program
- Installing basic no-cost energy efficiency measures in qualified stores
- Performing post-install checks to verify installations performed by Participating Contractors

**Gilbert Associates, Inc. (DVBE):**

Gilbert Associates was engaged to ensure that the Program's accounting structure, process documentation, and reporting complied with California law, California Energy Commission requirements, ARRA and US DOE regulations and audit requirements, as well as other specific Program requirements. Gilbert Associates' scope was adjusted during the course of the Program to provide for their engagement in incentive processing and hiring tracking responsibilities.

**Aztec Energy Partners ("Aztec"):**

Aztec was engaged to provide specialized refrigeration controls technology training to Participating Contractors. Aztec also acted as an optional supplier of refrigeration controls equipment.

**Community Colleges:**

The Program arranged for training sessions to be held at several Community Colleges, who in many cases provided facilities and other related services as financial leverage to the Program.

**Motus Recruiting & Staffing ("Motus"):**

Motus provided temporary staff during peak program periods, who were engaged in incentive processing and administrative activities.

**Technology/Equipment Suppliers:**

The technology infrastructure was essential to data collection, incentive processing and reporting functions. The key technology vendors on the Program, who provided generous financial discounts or other forms of financial leverage, were:

| | |
|---|---|
| **Salesforce.com:** | Software platform and licenses that upon customization comprised of and provided access to the Program's Project Tracking System |
| **AT&T:** | iPhones and service plans to support the CCC field activities and data collection |
| **Equipment:** | Efficiency equipment suppliers provided expertise, particularly in the context of training |

**Participating Utilities:**

The Program successfully recruited 12 utilities who allowed for ESJ incentives to be used to co-incent projects in their territory undertaken under the auspices of the Program. This financial leverage was instrumental in optimizing the economics of projects for customers and allowed the Program's incentive funds to be accessed by more customers for more projects.

**Participating Contractors:**

Participating Contractors were recruited by the Program, had to meet basic qualification criterion, and were required to take part in contractor training. The Participating Contractors recruited customers into the Program and performed efficiency retrofits under contract to customers. Participating Contractors were required to comply with all applicable federal, state, and local regulations; ESJ Program terms and conditions; and Utility Program terms and conditions when co-incentives were provided.

## Section 2: Original Goals and Objectives of the Agreement

The Original Goals and Objectives as stated in the Agreement are stated below in **bold**. A brief narrative is provided (un-bolded text) illuminating performance for each of the stated goals.

**The goal of this Program is to create new sustainable jobs for California workers and acquire significant, reliable, long term energy savings through Program implementation of proven Retrofits and Measures that will transform the commercial refrigeration market. The Program will result in commercial retail refrigeration retrofits across the state, and is based on the following activities:**

- **Employing disadvantaged, unemployed, and new to the job market individuals to become Program energy Surveyors;**

  The Program sub-contracted with the California Conservation Corps (CCC) to provide entry-level staff to execute key tasks in support of the Program operations. These tasks included: performing energy surveys at stores across California, installing basic energy efficiency equipment, and executing post-installation visits at sites to confirm that projects had been acceptably completed by Participating Contractors.

- **Conducting a statewide Program to train energy Surveyors and Installation Contractors;**

  The Program designed and executed training programs for both CCC Surveyors and Participating Contractors.

  Surveyor training consisted of several aspects, including:
  - Formal classroom instruction on energy efficiency technology and field activities
  - Ongoing field training to optimize performance of key duties
  - Selective opportunities to ride-along with Participating Contractors
  - Advanced surveyor training focusing on refrigeration controls technology
  - Supplemental training opportunities through leveraging Utility-offered training courses and seminars

  A summary of CCC Surveyor training statistics is as follows:

| | **Total Sessions** | **Graduates** |
|---|---|---|
| New Surveyor Training Sessions | 9 | 132 |
| Advanced Surveyor Training Sessions | 4 | 54* |
| **Total** | **13** | **132** |

  * Advanced trainees also completed New Surveyor Training, thus are not included in “Total”

  More detail on Surveyor training activities is contained in Section 3.4

  Participating Contractor Training was required in order for firms Program participation. Training consisted of:

  - Program participation orientation and guidelines
  - LED case lighting technology for lighting contractors
  - Refrigeration controls technology for controls contractors

  A summary of Participating Contractor training statistics is as follows:

| | **Total Sessions** | **Firms** | **Individuals** |
|---|---|---|---|
| Contractor Training Sessions | 8 | 83 | 160 |

  More detail on Contractor training activities is contained in Section 3.3.

- **Deploying Surveyors to conduct statewide energy Surveys of commercial buildings making use of refrigeration systems throughout California;**

  Six CCC Surveyor teams were established to perform surveys and other tasks. The teams were strategically located to provide broad reach across California. Target trips ("spikes") were also orchestrated on a regular basis to reach remote geographies across the state as necessary. Headquarters of the six CCC teams were: Inland Empire, San Jose, Sacramento, Norwalk, Los Angeles and San Diego.

  The CCC Survey teams conducted 6,025 surveys within 27 utility territories across California. More detail on surveying operations are contained in Section 3.5. Two illustrations related to survey performance are included in Appendix A; A-3, showing surveys completed by month, and A-4, a map of survey locations.

- **Providing Incentives to utility customers for completion of Retrofits;**

  The Program provided payments totaling $10,128,988 to incentivize 3,423 projects within 18 utility territories across California. These incentives were the property of the customer, who had the option to release payment. Payments were often assigned to the contractor who performed the installation. More details on incentives and incentive processing are contained in Section 3.8.

- **Providing Surveyors that will perform Direct Installation of selected Program Retrofits at qualified locations, as appropriate and as outlined in the Implementation Plan;**

  As described above, one of the tasks undertaken by the CCC was installation of a few basic energy efficiency measures. The Program identified three "Direct Install" (DI) measures to be performed by the CCC:

  - Beverage Merchandise Cooler Controllers
  - Compact Fluorescent Lamps – refrigerated spaces
  - Compact Fluorescent Lamps – non-refrigerated spaces

  The Program provided CCC Surveyors with training to understand the basics of the technologies of the Direct Install measures, how to identify opportunities for the measures within stores, and how to install them successfully. The Program provided field training to improve surveyor's success rates on converting DI opportunities into successful store installations. The Program also designed a CCC Surveyor performance incentive program (Surveyor Merit Award Program) which incorporated DI outcomes as part of the evaluation. Program efforts, in league with CCC Surveyor efforts resulted in substantial improvement in DI performance during the life of the Program. Summary statistics for the DIs follows:

| Direct Install Measures | Quantity Installed | Annual kWh Savings |
|---|---|---|
| Beverage Merchandise Controllers | 2,262 | 2,619,396 |
| Refrigerated CFLs | 8,212 | 2,455,280 |
| Non-refrigerated CFLs | 13,638 | 3,264,601 |
| **Total** | **24,112** | **8,339,277** |

  Further details on DI Measures are contained in Section 3.6. Two illustrations related to DI performance are included in Appendix A; A-6, DI counts by month, and A-7, a map of customer locations of DIs.

- **Managing completion of the Retrofits using licensed and trained Installation Contractors;**

  The Program successfully recruited Installation Contractors across California qualified to perform the measures offered through the Program – LED Case Lighting and Refrigeration Controls Strategies. As noted above, the Program provided training to 83 firms and 160 individuals. Of the 83 trained firms, 73 became Participating Contractors on the Program, with a total of 43 contracting firms ultimately performing installations rebated under the Program. The Program promoted installation activity through collection of base-case survey data for each site, notifying contractors that projects were funded, coordinating post-install checks of over 50% of project sites, and processing incentive payments. The Program also facilitated interaction between equipment suppliers and Participating Contractors to help optimize overall program performance. A summary of installations performed by Participating Contractors under the Program follows:

| Type of Installation | Installations Performed | Annual kWh Savings |
|---|---|---|
| LED Lighting Projects | 3,280 | 41,945,019 |
| Refrigeration Controls Projects | 143 | 12,123,070 |
| **Total** | **3,423** | **54,068,089** |

Further detail on Participating Contractor involvement and installations is contained in Sections 3.3, 3.6 and 3.14.d.

- **Surveying completion for fulfillment of performance and quality;**

  The Program established a post-install check protocol to ensure that:
  - Invoiced quantities were installed
  - Measures were operating properly
  - Installations met Program terms and conditions
  - Quality of installation was acceptable
  - Customers were satisfied and had an opportunity to provided additional feedback

  The Program successfully achieved its goal of performing post-install visits on 100% of controls projects and just over 50% of total projects installed by Participating Contractors under the Program. More detail on post-install checks and outcomes is included in Section 3.7.

- **Calculating Program results in terms of energy savings and jobs created, and estimating long term market transformation/sustainability impact of each.**

  During contract term, the Program continually tracked energy savings and job creation while providing life of Program energy savings and job creation estimates. The final outcomes for each follow:

| | Final Outcomes |
|---|---|
| Energy Savings (Annual kWh) | 62.4 M |
| Hires (Actual Head Count) | 131* |
| Hires (Calculated Job Creation) | 269 job-years** |

* Actual Hires include Participating Contractor part-time and retained employees
** Calculation includes both ARRA funds and Program Leverage Funding

The Program explored three aspects of Market Transformation:

- Evidence of lasting pricing reductions/lower cost structure for the efficiency technologies offered
- Evidence that customers would install the technologies offered in the absence of incentives
- Evidence that customers would install other technologies beyond those offered through the Program

Though no direct evidence of technology pricing declines was supported through an analysis of available data, the Program did find significant evidence that positive transformative impacts were achieved in all three aspects defined above. Section 3.13 discusses these findings.

# Section 3: Accomplishments

## 3.1 EnergySmart Jobs Program Activities

The ESJ Program was subdivided into six core steps:

**Key Field Resources Training**

- Contractor recruitment and training
- Surveyor training

**Survey Scheduled**

- PECI identifies priority leads for CCC to pursue
- CCC creates proposed survey schedule
- PECI approves survey schedule

**Site Visit by CCC Surveyor**

- Surveyor performs site survey and installs direct install measures
- Surveyor syncs store and survey data to database
- Surveyor submits paperwork to PECI

**Opportunity Claimed by Participating Contractor**

- Contractor reserves opportunity in database via portal
- Contractor works with customer and updates Program database

**Project Installed by Participating Contractor**

- Contractor completes retrofit
- Contractor submits final paperwork to PECI

**Project Rebated**

- PECI initiates rebate process
- CCC Surveyor or PECI performs post-install check
- PECI issues rebate check

Throughout this process, the Program communicated with partnering utilities and utility programs to provide updates. In addition to phone calls and email messaging, appropriately filtered information could be referenced by Program Participants and staff within the Program database via portal access. (For example, Participating Utilities could only view details of projects in their respective territories, and Participating Contractors could only view details of their own projects.) Details of project schedule, measures and rebate amounts were verified by portal users on an ad-hoc basis or via database reports.

A summary of key Program Management activities to meet overall Program requirements are listed below:

**Client Reporting, Budget Management and Invoicing**

- Weekly update calls, monthly reports, Critical Project Review meetings
- Assessment of budget outcomes, execution of revisions
- Project tracking and pipeline management
- Bi-monthly invoice submittals

**Constituency Recruitment and Ongoing Coordination**

- Participating Utilities and Utility Programs
- Participating Contractors
- Community College Partners
- Technology Vendors and Equipment Suppliers
- Program Subcontractors
- Customers

**Program Compliance (**Federal, State, Local)

- Davis Bacon Act (Program was eventually exempt)

- National Historic Preservation Act (Program was eventually exempt)
- Waste Management Plans
- Buy American Act

**Systems Development and Ongoing Refinement**

- Project Tracking System
- iPhone application

**Marketing**

- Program awareness amongst key constituencies and the public
- Assisting with contractor and customer recruitment

**Tracking and Assessment of Key Outcomes**

- Energy Savings
- Job Creation
- Market Transformation

## 3.2 Summary of Key Program Outcomes

The table provides a high level overview of the projected outcomes within the Program Proposal or within the Implementation Plan for the ESJ Program.

| | Proposed Outcomes | Actual Accomplishments |
|---|---|---|
| **Contractors Trained** | 50 Firms | 83 Firms |
| **Surveyors Trained** | 125 Corpsmembers | 132 Corpsmembers |
| **Surveys Completed** | 25,000 | 6,025 |
| **Contractor Installations** | 4,772 | 3,423 |
| **CCC Direct Installations** | 96,426 | 24,112 |
| **Post-Install Checks** | 50% of Installations | 51% of Installations |
| **Incentives Paid** | $9.5 M | $10.1 M |
| **Energy Savings (Annual kWh)** | 79.8 M* | 62.4 M |
| **Labor & Directs Budget** | $9.3 M | $8.1 M |
| **Leverage Funding** | $0.9 M | $6.6 M |
| **Hires (Actual Head Count)** | 117 | 131** |
| **Hires (Calculated Job Creation)** | 214 job-years | 269 job-years** |

* Adjusted from 88.1M kWh due to revision in DEER CFL energy savings calculation
** Actual Hires include Participating Contractor part-time and retained employees
*** Calculation includes both ARRA funds and Program leverage Funding

The sections below describe each of these Program outcomes in greater detail, and provide explanation as to why projected outcomes were not achieved where applicable.

## 3.3 Installation Contractor Training

The Program conducted multi-day training sessions to provide detailed information on how to work with the Program and to share best practices related to specific energy efficiency technologies.

The Program organized the following types of training sessions for Contractors:

- EnergySmart Jobs Program Structure (8 Sessions)
- LED Case Lighting Course (7 Sessions)
- Refrigeration Controls Course (7 Sessions)

**EnergySmart Jobs Program Structure**

This two to three day course was required for all Contractor participants and provided all Program Installation Contractors with a comprehensive understanding of ESJ Program policies and procedures, Program terms and conditions, and incentive application process and incentive requirements. It also introduced contractors to the Program's compliance requirements and the Program database/Portal. After

contracting firms completed this introductory aspect of the training, representatives generally selected one of two required course "tracks" based upon specialty – either LED Case Lighting or Refrigeration Controls.

**LED Case Lighting Course**

This one day session consisted of four segments each conducted by one of the ESJ Program's Partner LED case lighting Manufacturers – GE Lighting Solutions, Philips Lighting, LED Power, and ElectraLED. Each partner shared product information and best practices relating to their respective products within the context of this Program, including the use of occupancy/motion sensors.

**Refrigeration Controls Course**

For this course, the Program partnered with Aztec Energy Partners to deliver the training. This course ensured that the Installation Contractors were equipped with an understanding of:

- Refrigeration controls theory
- Installation and management of refrigeration controls
- Energy Management Systems (EMS)
- Monitoring equipment options

Program partners provided contractors with company specific contact information for them to purchase equipment and troubleshoot installation problems. The course also included a hands-on session that allowed the Installation Contractors to interact with several different EMS.

**Contractor Training Sessions Executed**

At the onset, the Program conducted multiple training sessions in quick succession and in multiple locations throughout California to facilitate program ramp-up.

| No. | Date | Location | Number of Trainees |
|---|---|---|---|
| 1 | October 4-8, 2010 | Los Rios Community College | 29 |
| 2 | October 11-13, 2010 | Long Beach City College | 13 |
| 3 | November 1-5, 2010 | Cuyamaca College | 27 |
| 4 | December 6-10, 2010 | Shasta College | 17 |
| 5 | January 24-28, 2011 | Mission College | 17 |
| 6 | February 8-11, 2011 | Kern Community College | 9 |
| 7 | March 8-11, 2011 | Cuyamaca College | 24 |
| 8 | May 2-5, 2011 | Mission College | 24 |
| | | **Total Individuals Trained** | **160** |

**Contractor Firms Trained: 83 (proposed outcome of 50 firms)**

## 3.4 Surveyor Training

Surveyor Training was a key component of the Program, with the dual end goals of supporting the energy efficiency retrofit targets of the program, and providing the Surveyors with employable job skills and real world work experience in the energy efficiency and commercial refrigeration sector. To this end, the Program conducted multi-day training sessions to introduce energy efficiency basics and specific energy efficient technologies, as well as the details of the ESJ Program and the roles and responsibilities of ESJ Surveyors.

The Program conducted two main types of Surveyor training sessions:

- New Surveyor Training / Surveyor Fundamentals (9 Sessions)
- Advanced Surveyor Training (4 Sessions)

**New Surveyor Training / Surveyor Fundamentals Course**

The New Surveyor Training (or Surveyor Fundamentals Course) was a pre-requisite for all Surveyor trainees. This course focused on the basics of energy efficiency, energy efficiency upgrades, Program structure, and information on partnering utility programs. It also provided trainees with the skills necessary to interact with customers, share information about the Program, and perform their key activities: surveys,

direct installation of CFLs and beverage cooler controllers, and Post Install Checks (PICs) for LED case lighting projects.

**Advanced Surveyor Training**

This training was a more advanced course for an identified/selected sub-set of Surveyors who had proven to be especially adept at energy surveys and had demonstrated greater technical aptitude. This course built upon the Surveyor Fundamentals class and was only open to existing Surveyors who had already passed the Surveyor Fundamentals class. Surveyors were introduced to more advanced refrigeration controls theories and strategies as well as the basics of how to conduct PICs for Controls projects.

In addition to the above training sessions, the Program conducted various forms of ad-hoc training for Surveyors and Surveyor teams. This included:

- Dedicated sessions to familiarize Surveyors with the use of the iPhone as a survey tool
- Web-based and in-person sessions to train each team's Special Corpsmembers on the use of the Project Tracking System to coordinate store visits and input data
- Program Field Representatives ride-alongs with Surveyor teams to help improve their surveying and customer-facing skills

**Training Sessions**

The Program conducted multiple training sessions in quick succession and in multiple locations throughout California to facilitate program ramp-up. As the Program progressed, the trainings occurred with less frequency, matching the need of backfilling Surveyors lost through attrition or driven by increased demands of the Program.

**New Surveyor Training Sessions**

| No. | Date | Location | Number of Trainees |
|---|---|---|---|
| 1 | September 27-30, 2010 | Placer CCC | 32 |
| 2 | October 10-14, 2010 | Long Beach City College | 30 |
| 3 | January 10-13, 2011 | Sacramento CCC | 7 |
| 4 | January 24-27, 2011 | Cuyamaca College | 14 |
| 5 | March 28-30, 2011 | Sacramento CCC | 8 |
| 6 | April 11-14, 2011 | Hawthorne (El Camino Community College) | 10 |
| 7 | June 6-9, 2011 | Cuesta College (through Kern Community College) | 11 |
| 8 | October 4-7, 2011 | San Luis Obispo CCC | 10 |
| 9 | November 15-17, 2011 | Cuyamaca College | 10 |
| | | **Total Surveyors Trained** | **132** |

**CCC New Surveyors Trained: 132 (proposed outcome of 125)**

**Advanced Surveyor Training Sessions**

| No. | Date | Location | Number of Trainees |
|---|---|---|---|
| 1 | December 2, 2010 | Placer CCC | 12 |
| 2 | April 26, 2011 | Sacramento CCC | 5 |
| 3 | August 23, 2011 | LACC | 25 |
| 4 | November 1, 2011 | Sacramento CCC | 12 |
| | | **Total Advanced Surveyors Trained** | **54** |

## 3.5 Site Surveys

Surveyors began their core task of surveying commercial retail sites with refrigeration units throughout California following the successful completion of their respective New Surveyor Training sessions. Each Surveyor team focused on the region around their home office location, but was also dispatched to more distant locations/sites as necessary.

At each site, Surveyors introduced themselves and the Program to store owners, and offered to perform no-cost energy surveys and/or direct installations. The energy surveys comprised of Surveyors gathering observational information about the site and entering this data directly into their survey tools – Program-issued iPhones with program specific applications pre-loaded. The survey data entered was then uploaded in real-time into the Program's Project Tracking System (PTS) database.

In general, Surveyor teams were dispatched to sites in the following three categories:

- Referrals from Program partners such as Utilities, Utility Programs, and Participating Contractors
- Assigned sites from the Program database that were Program generated (not referrals)

Visits were coordinated in a joint effort between PECI and CCC staff, and were prioritized in accordance with the listing of categories above.

The CCC Surveyor teams conducted 6,025 surveys within 27 utility territories across California. Two illustrations related to survey performance are included in Appendix A; A-1, showing surveys completed by month, and A-2, a map of survey locations.

The final number of surveys completed was significantly lower than the original proposed outcome of 25,000. Several factors impacted this result; key being the early success of the Program in achieving a higher Survey to Opportunity conversion rate as well as in successfully assigning incentive funds. The Program had initially anticipated an approximate conversion rate of 25% from surveyed stores to actual retrofit Opportunities identified and projects undertaken, allowing the Program to rebate an estimated 5,000 projects. The actual conversion rate of Survey to Opportunity turned out to be much higher (80%) with the Program successfully identifying 4,800 Opportunities for retrofits. With the incentives available, the Program was able to provide rebates to just over 3,400 projects. In addition, the Program successfully assigned its incentive funding as early as July, 2011 thus impacting the ability to "sell" program benefits to new stores. Other factors impacting the survey outcome included:

- Operating time period was impacted by delay in contract execution
- Impacts stemming from California hiring freeze (CCC staffing impacts and one less survey crew)
- Surveyors' success rates obtaining permission from store owners to conduct surveys was lower than anticipated

Efforts to improve survey performance had significant positive results, and included:

- Enhanced training for surveyors to improve communication and selling skills
- PECI staff "ride-alongs" with survey crews to provide on-location training
- Surveyor Internship Initiative, placing CCC surveyors with Participating Contractors to facilitate logistics and introductions to store owners

## 3.6 Energy Efficiency Installations

**Contractor Installations:**

The Program facilitated execution of the following Participating Contractor-installed measures:

- LED Case Lighting (LEDs)
- Motion Sensors for LED Case Lighting (LED w/MS)
- Refrigeration Controls – Floating Head Pressure (FHP)
- Refrigeration Controls – Floating Suction Pressure (FSP)
- Refrigeration Controls - Monitoring and Maintenance Agreements

A summary of completed contractor installations versus proposed outcomes (underlying kWh savings goal originally established in the Program proposal) is summarized below:

| | Proposed Outcome | Actual | % of Proposed |
|---|---|---|---|
| LEDs | 4,560 | 3,280 | 72% |
| % LED w/MS | 68% | 1,402 | |
| Refrigeration Controls | 212 | 143 | 67% |
| % FHP Only | Not Specified | 5% | |
| % FHP & FSP | Not Specified | 95% | |
| **Total - Contractor Installed** | **4,772** | **3,423** | **72%** |
| Monitoring and Maintenance Agreements | Not Specified | 12 | n/a |

Quantities of contractor installed measures completed under the Program were ultimately limited by availability of incentive funds, which were fully committed to projects by May, 2011. Had additional incentive funding been available, substantially more installations could have been realized.

A map of Participating Contractor Installations is includes as A-3 in Appendix A.

**CCC Installations:**

The Program facilitated execution of the following Surveyor-installed measures:

- Beverage Merchandise Cooler Controllers
- Compact Fluorescent Lamps – refrigerated spaces
- Compact Fluorescent Lamps – non-refrigerated spaces

A summary of completed CCC installations versus proposed outcomes is summarized below:

| Equipment Installed | Proposed Outcome | Actual | % of Proposed |
|---|---|---|---|
| Beverage Merchandise Cooler Controllers | 3,454 | 2,262 | 65% |
| Refrigerated CFLs | 25,472 | 8,212 | 32% |
| Non-refrigerated CFLs | 67,500 | 13,638 | 20% |
| **Total – CCC Installed** | **96,426** | **24,122** | **25%** |

Two illustrations related to DI performance are included in Appendix A; A-4, showing DIs completed by month, and A-5, a map of DI locations.

Quantities of CCC Direct Install Measures were significantly below original goals. This outcome was driven by lower than expected survey count, as direct install success rates are largely driven by the CCC surveyors' ability to enter stores and engage customers. Factors contributing to the lower-than-anticipated survey outcome were discussed in Section 3.5 above.

Though the overall DI counts were lower than expected, the relationship between successful direct installs and completed surveys was approximately as anticipated, as shown in the table below:

| | Proposed Outcome | Actual | % of Proposed |
|---|---|---|---|
| Completed Surveys | 25,000 | 7,172* | 29% |
| CCC Direct Installs | 96,426 | 24,166 | 25% |
| Penetration Rate | 3.86 | 4.0 | 104% |

* In the course of implementation, the Program realized that successful store visits did not encompass just completed surveys but also visits where Direct Installs were successfully installed even though customers did not proceed with the full store survey.

A number of successful tactics were employed to improve the CCC Direct Install Measure success during the course of the Program:

- Training efforts to emphasize direct install success rates
- Increase of allowable units permitted for installation in each location
- Direct Install "sweeps" during which surveyors focused on DI-activity
- Surveyor Merit Award Program (SMAP) – incentivizing surveyors for success, including Direct Installs

Appendix A, A-4 shows the substantial increase in monthly DI installation quantities starting in July, 2011 resulting from these tactics. These steps were taken once it became clear that the incentive funding was exhausted, thus reducing the need for additional surveys. The tactics are also discussed more thoroughly in the Section 3.14.a. below.

## 3.7 Post-Install Checks (PICs)

The Program initiated the rebate process once a contractor completed a retrofit project and submitted complete ESJ incentive paperwork to the Program. Part of the rebate process involved determining if a Post-Install Check (PIC) of the completed project would be required. PICs were required for projects that met any one of the following criteria:

- The first five projects installed by a Participating Contractor submitted for ESJ Program incentives
- All projects with incentive amounts over $5,000
- All projects with Controls measures

In addition, a PIC may have also been requested for the additional scenarios:

- Any project with a 20% or greater difference between invoice install quantity and recommended count based upon survey
- Any project randomly selected to meet PIC quality assurance objectives

PICs of LED projects were conducted by ESJ Surveyors. Due to the complexity of Controls projects, the determination was made that these be conducted by PECI's Field Representatives. When possible, Surveyors who had successfully completed Advanced Surveyor Training accompanied the PECI staff for these surveys as a form of on-the-job training.

The Program conducted 1,882 Post Install Checks (PICs). Figure A-6 in Appendix A shows the number of PICs completed per month of the Program.

## 3.8 Rebate Processing and Incentives Paid

All energy efficiency installations and rebates processed are documented in the customized Project Tracking System (PTS). The projects were categorized as either Direct Installs or Complex Installations (LED Case lighting and/or Refrigeration controls projects installed by Participating Installation Contractors.) All rebates were calculated, verified, and documented following a similar process:

1. **Paperwork Received:** Paperwork from the contractor or surveyor was received by e-fax or e-mail.
2. **Account Updated in PTS:** The account record data in the PTS was verified or updated based upon incentive application signed by the customer.
3. **Incentive Record Created in PTS:** Individual incentive records were generated from the opportunity data. Installation information as well as the payee was included on the rebate (incentive) record. Based upon the project invoice and other documentation, measure information was added or updated as required. The measure incentive amount from the utility program provided was included on the rebate record to calculate maximum incentive payable by ESJ.
4. **Paperwork Verified as Complete:** The incentive paperwork was reviewed to determine that all required paperwork had been submitted and filled-in completely; documentation submitted for partnering utility programs was also reviewed for alignment.
5. **Measure Data Verified in PTS:** The processor compared the incentive worksheet signed by the customer with the invoice and details in the PTS opportunity and survey records.
6. **PIC Requirement Determined**: The PTS automatically recommended a PIC based upon data triggers. After the paperwork and PTS data had been vetted, the processor determined if a PIC was required.
7. **Measure Quantities Refined in PTS:** Measure quantities were updated in the PTS based on invoice and/or PIC, whichever was lower. The PIC complete date, status, and any customer or PIC surveyor comments were included in the PTS.
8. **Incentive Calculated and Incentive Coversheet Prepared:** The project incentive amount was determined not only by the Program incentive amounts per measure, but also incorporated:
    a. Reduction based upon total project cost less utility incentive amount
    b. Addition of Program incentive project coupon; amount based on project type and size

    The incentive coversheet was an optional worksheet which provides a summary of the key incentive information, exceptions, and calculations for input into the PTS.

### Incentive QA Process

The "triple check" process involved verification of each contractor-installed ("Complex") incentive by three Program team members. The first verification was done by the incentive processor on his/her work. The second check was conducted by a second team member who had not worked on processing that specific

incentive. Finally, a Program Manager provided the third verification of the incentive. The third check was performed prior to authorizing payment.

The Program distributed more incentive funding than originally budgeted, facilitated by a budget re-allocation voted upon by the Commission on November 30, 2011. A summary of final incentive payments by measure follows:

| Measure | Original Budget | Actual | % of Budget |
|---|---|---|---|
| Refrigeration Controls | $3,867,149 | $3,145,843 | 81% |
| LED Case Lighting | $5,092,522 | $6,700,524 | 132% |
| Direct Installations | $589,611 | $282,620 | 48% |
| Financing Charges | $0 | $46,472 | n/a |
| **Total** | **$9,549,282*** | **$10,175,459** | **107%** |

* Budget for the incentive task was revised to $10,212,188 following Contract Amendment 2 approval.

Please note that the "Actual" outcome was able to surpass the "Original Budget" total because the budget was amended during the course of the Program, effectively re-allocating funds into the incentive budget. The actual total amount of incentives expended was 99% of the revised budget. Incentive variances resulted from a higher quotient of LED versus Controls projects, and fewer DI installations than were originally projected. Figure A-7 in Appendix A shows incentives paid by month.

## 3.9 Leverage Funding

Program partners contributed and provided documentation for nearly 600% of the leverage funds originally committed at the onset of the Program. This is largely due to the successful recruitment of Participating Utilities and the realization of utility incentives on most of the projects.

| | Committed | Actual |
|---|---|---|
| **PECI*** | $225,000 | $232,784 |
| **AT&T** | $27,071 | $27,071 |
| **CA Conservation Corps** | $309,570 | $275,865 |
| **Salesforce.com Foundation** | $307,800 | $307,800 |
| **Sacramento Municipal Utility District** | $15,692.00 | $205,665 |
| **Pacific Gas and Electric** | N/A | $3,920,665 |
| **San Diego Gas & Electric** | N/A | $352,562 |
| **Southern California Edison** | N/A | $1,133,830 |
| **Silicon Valley Power** | N/A | $9,900 |
| **Truckee-Donner** | N/A | $1,230 |
| **City of Palo Alto** | N/A | $0 |
| **Burbank Water and Power** | N/A | $2,070 |
| **Alameda Municipal Power** | N/A | $22,291 |
| **Roseville Electric**** | N/A | $0 |
| **Lodi Electric** | N/A | $21,112 |
| **Turlock Irrigation District** | N/A | $6,909 |
| **Aztec Energy Partners** | $9,100.00 | $8,297 |
| **LED Power** | $12,800.00 | $1,887 |
| **GE Lighting Solutions** | $28,800.00 | $2,555 |
| **Philips Lighting** | $38,000.00 | $30,000 |
| **Power Secure***** | $20,000.00 | $0 |
| **ElectraLED** | $17,500.00 | $7,890 |
| **Community Colleges** | $94,142 | $996 |
| **Total** | **$1,105,475** | **$6,571,369** |

* PECI leverage was not committed to in the proposal, but resulted from work performed prior to contract execution.

** Roseville Electric's partnering efficiency program is also ARRA-funded and funding of coordinated projects was considered leverage

***In the Program proposal phase, Power Secure committed to participation in Program contractor training, but was ultimately unable to be involved in the Program.

It should be noted that this table of documented leverage does not include various forms of "soft" leverage that accrued to the Program through activities and support of Participants that were not readily quantifiable. Examples are administrative time and resources provided by manufacturer partners and utilities related to their participation at ESJ training sessions, as well as discounted product pricing offered by manufacturer partners to Participating Contractors for ESJ-related retrofit projects.

## 3.10 Energy Savings Realized

**Annual kWh Savings:**
A summary of annual kWh savings outcomes by measure compared to Proposed Outcomes follows:

| Measure | Proposed Outcome | Actual | % of Proposed |
|---|---|---|---|
| Refrigeration Controls | 8,711,695 | 12,123,070 | 139% |
| LED Case Lighting | 43,340,176 | 41,945,019 | 97% |
| Beverage Merchandise Controllers | 3,999,848 | 2,619,396 | 65% |
| Refrigerated CFLs | 7,615,979 | 2,455,280 | 32% |
| Non-refrigerated CFLs | 16,098,750 | 3,264,601 | 20% |
| **Overall** | **79,766,448** | **62,407,366** | **78%** |

The chart below illustrates the proportion of savings attributable to each measure implemented by the Program:

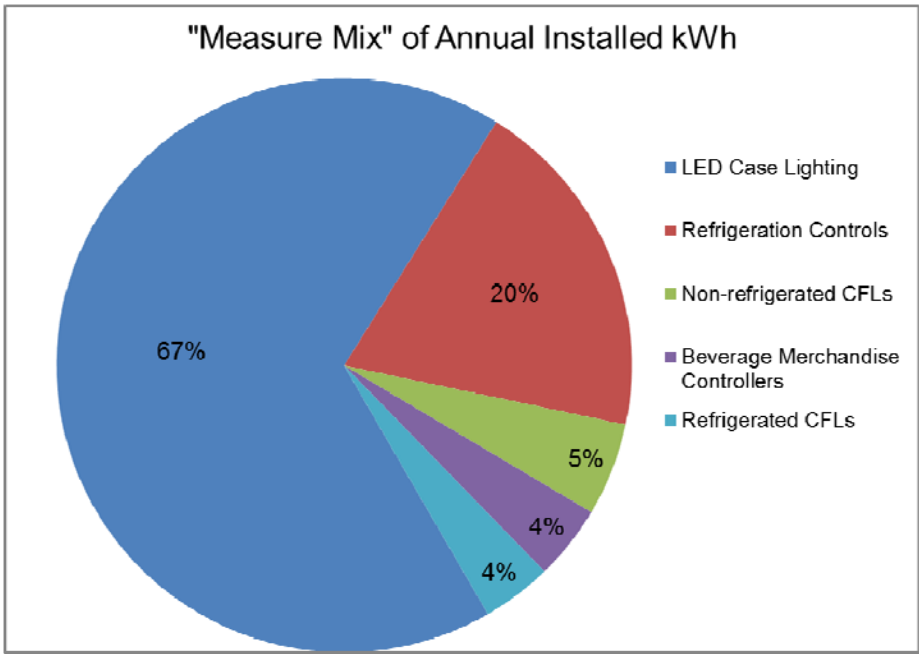



Figure A-8 in Appendix A is a graph showing energy savings realized by month.

Energy savings outcomes were impacted by the following:

- Substantially lower direct install counts
- Final incentive structure provided for fewer projects overall, but with greater savings per project

A reconciliation of the proposed savings outcome to the actual outcome is provided below:

| | Annual kWh |
|---|---|
| **Proposed Savings Outcome:** | **79.8 m** |
| Direct Install Count (from 96k to 24k) | (19.4 m) |
| Fewer Complex Projects (from 4,772 to 3,423) | (14.9 m) |
| Greater Savings per Project | 16.9 m |
| **Actual Outcome:** | **62.4 m** |

**Peak kW Savings:**

Peak kW demand reduction resulting from Program installations was 6.8 megawatts.

## 3.11 Budget and Cost Structure

**Overall Budget Outcome**

A summary of overall Program spending versus original budget, categorized by scope categories follows:

| Scope | Original Budget | Amended Budget | Actual Spending | % of Amended Budget |
|---|---|---|---|---|
| Management, Planning & Reporting | $1,584,269 | $1,360,873 | $1,281,530 | 94% |
| Marketing and Participant Recruitment | $520,727 | $496,226 | $385,936 | 78% |
| Training & Workforce Development | $1,137,725 | $633,214 | $626,880 | 99% |
| Surveys, Direct Installs and Verification | $4,422,193 | $4,095,667 | $3,797,231 | 93% |
| Contractor Oversight & Quality Assurance | $960,344 | $845,343 | $810,796 | 96% |
| Incentive Processing | $634,177 | $1,165,204 | $1,096,635 | 94% |
| Incentive Funding & Interest | $9,549,282 | $10,212,187 | $10,168,645 | 100% |
| **Overall** | **$18,808,717** | **$18,808,717** | **$18,167,654** | **97%** |

A detailed view based on official contractual tasks is presented in Section 7.

**Measure and Energy Savings Cost Structure**

An analysis of the cost structure of projects and saving is presented below:

| | Incentive Costs Only | | | | |
|---|---|---|---|---|---|
| **Measures** | **Projects** | **Cost** | **Cost/Project** | **kWh Savings** | **$/kWh** |
| LED Case Lighting | 3,280 | $6,700,524 | $2,043 | 41,945,019 | $0.16 |
| Refrigeration Controls* | 143 | $3,145,843 | $21,999 | 12,123,070 | $0.26 |
| Direct Installs | 4,457 | $282,620 | $63 | 8,339,277 | $0.03 |
| **Total** | **7,880** | **$10,128,987** | **$1,285** | **62,407,366** | **$0.16** |
| | **Other Program Costs** | | | | |
| Other Costs | | $8,038,667 | $1,020 | | $0.13 |
| **Overall Costs** | | **$18,167,654** | **$2,306** | | **$0.29** |

*Includes Monitoring and Mantenance Agreement incentives

**Annual Energy Savings Accruing to Customers**

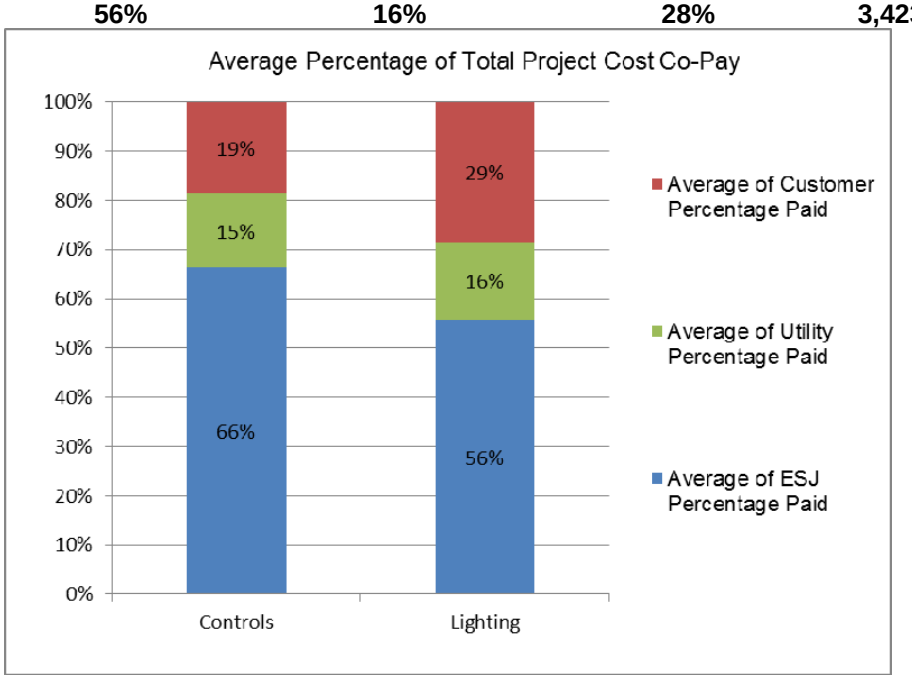
Assuming an average energy cost of $0.165/kWh for customers in California[1], the Program's savings results in approximately $10.3 million of customer electricity bill savings per year.

**Project Funding Structure**

The cost of ESJ-eligible retrofits varied significantly depending on the size of the customer site and scope of the project. As a result, the percentage of the project covered by incentives – either ESJ alone or combined with utility program incentives – varied as well. The Program projects had the following funding structure:

[1] Source: http://energyalmanac.ca.gov/electricity/index.html
Prices: Utility-wide Weighted Average Retail Electricity Prices.

| Measure Type | Average of ESJ Percentage Paid | Average of Customer Percentage Paid | Average of Utility Percentage Paid | Project Count |
|---|---|---|---|---|
| Controls | 66% | 15% | 19% | 143 |
| Lighting | 56% | 16% | 29% | 3,280 |
| **Grand Total** | **56%** | **16%** | **28%** | **3,423** |




In aggregating the total of all spending on Refrigeration LED and Controls projects rebated in the Program, ESJ funding paid 42% of reported project costs.

| | | |
|---|---|---|
| ESJ Rebate Amount | $ 9,846,367.68 | 42% |
| Utility Rebate Amount | $ 5,736,193.18 | 25% |
| Customer Portion | $ 7,615,956.72 | 33% |
| **Sum of Project Spending** | **$23,198,517.58** | |

## 3.12 Job Creation and Hiring

Job creation and hiring was tracked using two methods, “Actual Headcount” and “Calculated Job Creation”.

**Actual Headcount:**

This method tracks actual individuals that have been hired to work on Program activities by PECI and the CCC. Participating Contractor hires were also tracked, however it was not mandatory that these individuals work specifically on the ESJ projects. Due to the economic climate and to acknowledged differences in contractor participation levels, the methodology for tracking Participating Contractor hires was refined during the course of the program to include part-time and retained employees. A detailed overview of the updated approach for tracking Participating Contractor hires is included in the Program Implementation Plan (Page 80, Section 0.29.4, Participating Contractor New Hires). The peak Actual Headcount for the Program occurred in December, 2011, and is as follows:

| | Full-Time | Part-time | Retained | Total |
|---|---|---|---|---|
| PECI | 19 | - | - | 19 |
| California Conservation Corps | 65 | - | - | 65 |
| Participating Contractors | 34 | 7 | 6 | 47* |
| **Total** | **118** | **7** | **6** | **131** |
| **Original Goal** | **117** | **-** | **-** | **117** |

*Includes part-time equivalent and retained employees

**Calculated Job Creation:**

This method utilizes the federal calculation conversion rate of $92k per one job-year to estimate job creation resulting from Program spending. The original Program goal of 214 jobs-years was calculated assuming both ARRA-funded expenditures as well as leverage funding expended. The table below shows outcomes for the three spending scenarios: ARRA funds only, ARRA and Leverage funds (as per the original goal projection), and ARRA, leverage and funds paid by customers.

| | Spending | Job-Years | % of Forecast |
|---|---|---|---|
| Proposal Forecast | $19.8 M | 214 | 100% |
| Outcome Scenarios | | | |
| ARRA Funds Only | $18.2 M | 198 | 93% |
| ARRA & Leverage Funds | $24.7 M | 269 | 126% |
| ARRA & Leverage and Customer Funds | $32.3 M | 352 | 164% |

**Full Time Equivalent Calculation:**

Program management also calculated the number of individuals working in support of the Program in a given month by capturing full-time equivalent positions within the active categories - Program team, Sub-contractors (CCC, Gilbert Associates, and Aztec Energy), and Installation Contractors. The calculation results in 256 full-time equivalent jobs during a steady state month of program activity.

## 3.13: Market Transformation

The Program undertook a specific effort ("Market Catalyzation & Transformation") to assess further energy efficiency opportunities available within the population of stores involved in the Program as well as to better understand the transformative effects of the Program on the market. Specifically, the Program explored three aspects of Market Transformation to assess lasting impacts that resulted from Program activities:

- Pricing and Research & Development
- Market Penetration
- Efficiency Mindset Adoption

The opportunity assessment phase of the intiative involved a detailed analysis beginning with Program survey data of 73 ESJ participating stores spanning 17 different utility territories. The survey results were then verified and further informed by additional visits and more detailed store surveys. Based on those findings ana analysis, the Program estimates the following potential opportunity estimates:

| | Potential Store Count | Potential Savings | |
|---|---|---|---|
| **ESJ Measures Unfulfilled** | | | |
| LED Lighting | 2,370 | 29,934,400 | |
| Controls | 380 | 32,555,000 | |
| LED Partial Installs | 760 | 1,020,300 | |
| Subtotal | | | **63,509,700** |
| % of Overall Potential | | | 32% |
| **Additional Measures Unfulfilled** | | | |
| Case ECMs | 2,850 | 26,270,700 | |
| Anti-Sweat Controls | 480 | 13,804,100 | |
| LEDs in Open Cases | 1,370 | 18,557,000 | |
| Doors on Open Cases | 860 | 15,875,700 | |
| Night Covers | 600 | 2,977,600 | |
| Store Lighting | 880 | 4,794,700 | |
| Subtotal | | | **82,279,700** |
| % of Overall Potential | | | 42% |
| **Unfulfilled Savings Potential Identified (73% of total)** | | | **145,789,400** |
| ESJ Projects Executed (27% of total identified potential savings) | | | 54,068,100 |
| Total energy savings potential identified | | | 199,857,500 |

The estimated 145.8 million kWh of potential energy savings represents unfulfilled opportunities at the 6,025 ESJ-surveyed stores; approximately 25% of what the Program estimates to be the total population of 26,000 similar stores in California consisting of medium to large grocery stores, convenience stores, liquor as well as drug stores.

On Market Transformation, the targeted conversations with a sample set of Participating Contractors, Customers and Manufacturer Partners yielded the following insights.

**Pricing and Research & Development:**

The Program performed an assessment to determine whether pricing or cost of Program-related technologies (LED case lighting and refrigeration controls / energy management systems (EMS)) went down as a result of the Program, thus paving the way for greater market penetration.

Prior to conversations, the Program performed an analysis of pricing data contained within the Program database. The Program examined invoices submitted by contractors for both LED projects and Controls projects and looked for equipment pricing trends over time. This analysis concluded that there were no discernable sign of empirical evidence demonstrating a downward pricing trend for equipment during the course of the Program.

The second aspect of this assessment was to engage Participating Contractors and Manufacturers/Suppliers in a discussion of their experiences with pricing during the course of the Program. The Program did identify examples of Participating Contractors and Suppliers who indicated that market pricing was influenced by the Program. Several participants who had been involved since the inception of the Program indicated that prices of LED lights experienced a drop; in the range of 10 – 30%.

The Program also identified examples of manufacturers launching R&D efforts stemming from their involvement with the Program that had the strategic purpose of devising LED lighting that would be available at a lower price point and less costly to install. Several of these efforts appeared to have been in

close consultation with or based on input from Participating Contractors. In general, there was agreement that these R&D efforts led to improvements in the next generation of lights which were produced.

**Market Penetration:**

The Program performed an assessment of whether it paved the way for wider adoption of the technologies offered in the absence of ESJ incentives for customers.

There was general agreement among both lighting contractors and manufacturers that the Program improved awareness of LED products in the market place. A manufacturer partner surveyed was also of the opinion that the Program was successful in helping educate contractors and customers alike about the energy efficiency benefits of refrigeration controllers and EMS.

Several Participating Contractors indicated experience with customers who had been surveyed by ESJ and had proceeded with or have expressed interest in projects even in the absence of available ESJ incentives. It was also telling that there were examples of chain stores, both a national chain and a regional chain, which had several stores involved in the Program and both of whom indicated an interest in further investigating similar projects for other stores in their chain outside of the Program.

**Efficiency Mindset Adoption:**

Finally, the Program performed an assessment of whether it paved the way for the adoption of other energy efficiency technologies by customers reached by the Program.

Contractors surveyed were particularly buoyed by the relationships they had built both with new customers as well as existing ones. Several of these Participating Contractors had already received call backs from customers who had completed projects and received incentives, and were interested in pursuing other non ESJ related efficiency retrofits. In fact, about 85% of the customers surveyed during the initiative were interested in learning more about energy efficiency technologies driven partly by their positive experience on the ESJ Program.

Customers, either directly or through their contractors, have also enquired about the availability or possibility of Program incentives for other energy efficiency measures.

## 3.14: Key Sub-Contractors and Participants

### 3.14. a. California Conservation Corps

The California Conservation Corps (CCC), a publicly funded California jobs organization, was the Program's primary partner in recruiting and coordinating EnergySmart Jobs Surveyor teams comprising young, underemployed people newly entering the State workforce. The primary responsibilities of the Surveyors were to provide energy surveys of target stores, perform direct installation of certain technologies where appropriate, and conduct post-installation checks on completed projects prior to rebate.

The Program had six active teams of ten Surveyors each, based out of different locations throughout the state: Sacramento, San Jose, Los Angeles, Norwalk, Inland Empire, and San Diego.

**Performance Assessment:**

ESJ Surveyors successfully visited and provided offerings to 7,172 distinct stores through the life of the Program. Store visits were comprised primarily of contractor referrals in the early half of the program. As incentives funds were fully committed in the latter portion of the Program, referrals from partners decreased but Surveyors were able to reach out to stores via cold calls and drop-ins.

Figure A-9 in Appendix A illustrates the number of distinct, new stores the surveyors successfully visited each month (either to perform an energy survey and/or provide Direct Installs) as well as the source of each lead.

Figure A-10 in Appendix A shows the total number of successful store visits by ESJ Surveyors each month, broken down by type of visits (Surveys, Direct Installs Only or Post Install Checks.) A few key observations on A-2 are:

- Surveyors achieved more than 9,000 successful store visits, including for Post Install Checks (PICs), throughout the program, with Surveyor activities in the early half of the program focused on surveys.
- Post install checks increased towards the latter half of the program term as projects reached completion.
- Surveyors were able to provide direct installs in cases where store owners did not want surveys performed.

**Key Surveyor Initiatives:**

- **Surveyor Internships**

Started in March 2011, this initiative was designed to allow for select CCC Corpsmembers who were trained as ESJ Surveyors to be partnered with an ESJ partner, such as an ESJ Participating Contractor, to perform surveys on that partner's leads. The intent of this initiative was to:

- Allow for partners' leads (particularly high volume partners) to be addressed more effectively and efficiently
- Provide Surveyors with the opportunity to experience working alongside and as part of a private workforce
- Broaden the geographic reach of Program to more remote regions

The Surveyor Internship Initiative was a success on two fronts:

- Both sets of intern Surveyor/Contractor partnerships demonstrated increased productivity in terms of the number of surveys successfully completed
- Both partnerships resulted in the hiring of the intern surveyor as the first internship period ended

This initiative was put on hold, and eventually closed in June 2011, as the Program had fully committed its incentive funds and partner leads were addressed.

- **Direct Install Expansion Pilot**

In June 2011, the Program started pilot initiatives with the Inland Empire and San Diego Surveyor teams; targeting DIs for a broader cross section of customers. The Inland Empire team performed outreach/visits to all types of commercial retail outlets in their region while the San Diego team visited retail outlets with reach-in refrigeration units. The outcome of these pilot initiatives informed the Program's efforts to increase the DI success rates.

Based on the teams' experiences and lessons learned, the Program expanded its DI outreach to all types of commercial retail outlets with reach-in refrigeration units. In addition, responding to the success of teams in installing DIs, the Program raised the per store quota for each type of DI measure.

- **Assigned Cold Calls**

In addition to prioritizing PICs of completed projects, Surveyor teams embarked on an enhanced cold call effort in September, 2011. Based on the location of existing leads and scheduled PICs, CCC Coordinators assisted the Surveyor teams in identifying other potential stores in the vicinity where Surveyors could conduct drop-ins to offer no-cost energy surveys and DIs.

This effort maximized the efficiency and effectiveness of each surveyor team, and led to increases in both direct install counts as well as number of completed surveys from cold-calls.

- **Surveyor Merit Award Program (SMAP)**

Accompanying the Assigned Cold Call effort was the development and implementation of Surveyor Merit Award Program (SMAP). The intent of SMAP was to highlight and encourage the successful completion of key surveyor activities such as energy surveys, DIs and PICs. Points were assigned to key surveyor activities, recorded, and tabulated on a weekly basis. Teams with the highest score at the end of each 4-week period were awarded gift cards, with an outstanding surveyor identified for each period as well.

SMAP kicked off on September 26, 2011, with team and individual awards presented after every 4-week period. As a testament to the drive and enthusiasm of the Surveyor teams, the Program experienced a sustained improvement in successful store visits of at least 15% as well as quality of paperwork submitted by Surveyors.

**Matriculations from Program:**

One of the secondary goals of the Program was to spur the matriculation of Surveyors from the Program into permanent positions in the workforce outside of ESJ. It was anticipated that Surveyors would gain valuable knowledge about energy efficiency in general, as well as the specific technologies highlighted in this Program. In addition, the on-the-job experience and communication skills built through stores visits and interaction with store owners would be particularly transferrable to employment outside of the Program.

In this regard, the Program can point to specific examples of Surveyors finding employment after participation in this Program which is likely to have resulted from the knowledge, experience and skills gained on the Program.

- **Surveyor Internship Initiative**

  Two of the Surveyor interns involved in this initiative were eventually offered full-time positions (in Sales roles) with their respective Participating Contractor. In addition, one of those contractors reached out again to the Program to enquire into another intern's availability to work with them on a project-based position, even after the Surveyor had matriculated from the Program. In this case, the Program helped to facilitate a connection between the former Surveyor and the contractor.

- **General Program Experience**

  The Program is also aware of several instances where Surveyors have attributed their current employment (with external employers) to the experience and skills they gained while on the Program. The following represents a sample of the general positions and fields they have found permanent jobs:

  - Field technician with an electric utility in California
  - Project manager with an LED manufacturer in California
  - Field researcher with a research institute in Nevada
  - Technician/Custodian with a school district in California

## 3.14. b. Gilbert Associates, Inc. (DVBE)

Gilbert Associates was engaged as a key subcontractor to ensure that the Program's accounting structure, process documentation, and reporting complied with California law, California Energy Commission requirements, American Recovery and Reinvestment Act, and US Department of Energy regulations and audit requirements, as well as other specific Program requirements. The Program committed to achieve a Disabled Veteran Business Enterprise (DVBE) participation rate of at least 3% of the contract bid amount.

A significant aspect of Gilbert Associates' scope was initially anticipated to be Davis Bacon Act (DBA) compliance, involving documentation tracking responsibilities to assure Participating Contractor compliance. Upon the DOE's determination that the Program did not need to comply with DBA requirements, Gilbert Associates' intended scope of work was significantly impacted. This situation created a substantial risk that their participation rate would fall dramatically below the 3% commitment. The Program worked to identify other fulfillment needs to replace their diminished scope of activity. As a result, their scope was modified to include activities related to Participating Contractor hiring tracking, administrative tasks related to Waste Management compliance, and incentive processing. Gilbert Associates' capabilities proved an excellent fit for the new tasks identified for them, playing a very critical role in providing much-needed incentive processing capacity.

Gilbert Associates ultimately billed $401,227 during the life of Program. The table below provides a summary of how that total billing amount relates to overall contract spending.

| | | |
|---|---|---|
| Gilbert Actual Total Billing | $401,227 | |
| Total Contract Billing net of Incentives | $8,038,667 | 5.0% |
| Total Contract Billing | $18,167,654 | 2.2% |
| Total Contract Bid Amount | $18,808,717 | 2.1% |

### 3.14. c. Aztec Energy Partners

Aztec Energy Partners (Aztec) partnered early with the Program by sharing their expertise and experience of energy management and control solutions that include a full range of products, services, engineering, and project management for the food retail industry. Aztec put together the "step-by-step on how to program refrigeration controls" portion of the controls training to contractors (all of whom were required to have some prior experience working in refrigeration controls). The resulting training sessions included hands-on experience with actual controls systems from several manufacturers, while the PECI team created and taught the theory and benefits behind refrigeration controls. Through this collaboration, the Program was able to ensure that the Participating Contractors were prepared to sell and install refrigeration controls, as well as to program them to provide the best energy efficiency and performance possible.

Aztec presented at seven sessions with a total of 24 contracting firms in attendance during the Program term. A portion of their training time, as well as time and expenses incurred for training preparation and consulting were provided as leverage.

In addition to their contributions in the area of training, Aztec competed and successfully won a competitive bid to serve as the Program Preferred Controls Distributor. In this function, Aztec was positioned as a preferred supplier of refrigeration controls equipment to participating contractors. The prevalence of use of Aztec in this function was limited, as many of the Participating Controls Contractors had established relationships with equipment manufacturers that provided comparable access and pricing for this equipment.

### 3.14. d. Participating Contractors

Installation Contractors played a key role in the Program; educating store owners on energy efficiency options, conducting retrofits at these stores and assisting stores owners with incentives applications. To ensure consistency in the information the Program presented, as well as a minimum standard in the retrofit services provided, installation contractors had to meet certain requirements to qualify as Participating Contractors on the Program:

- Reputable Business per Better Business Bureau
- Appropriate Contractor License(s)
    - C10 or C38 (for LED case lighting installation work)
    - C38 (for refrigeration controls installation work)
- Certificate of Insurance
- Experience with Refrigeration Controls projects (for Controls contractors)
- ESJ Program Training

Prior to gaining access to the Program database and/or consideration of projects for incentives, contractors were required to complete and sign a Participation Agreement with the EnergySmart Jobs Program.

#### Contractor Recruitment and Effectiveness of Training

In an effort to establish an initial pool of Participating Contractors, the Program recruited potential contractors via the following means:

- Utility and Third Party Referrals – Utilities and their programs referred contractors and authorized agents to the Program. The Program also reached out to community colleges and contractor associations such as the Builders/Contractors Exchange for referrals.

- Participating Contractor Referrals – Participating Contractors referred other contractors to the Program.
- Marketing Outreach – Program actively reached out to contractors based on data from the North American Industry Classification System (NAICS) and through the Program website.
- Outreach to key customer trade associations

A total of 83 contractor firms/organizations completed the ESJ program contractor training course and 73 became participating contractors. Of the 73 firms:

- 49 specialized in LED lighting projects
- 11 specialized in Refrigeration Controls projects
- 13 specialized in both types of projects

One contractor was terminated from the Program for a failure to fulfill program expectations.

**Distribution of Incentives to Participating Contractors**

Of the total $9.88 million of incentive dollars available for contractor-installed projects, the Program successfully provided $9.85 million of incentives to retrofit projects performed by 49 different Participating Contractors. The Program provided a total of:

- $6.70 million in incentives to LED projects performed by 41 different contractors.
- $3.15 million in incentives to Controls projects performed by 19 different contractors.

Figures A-11 and A-12 in Appendix A illustrate the distribution of incentives to LED projects and Controls projects, respectively by contractors who performed the work.

## 3.14. e. Customers

**Geographic/Demographic Distribution**

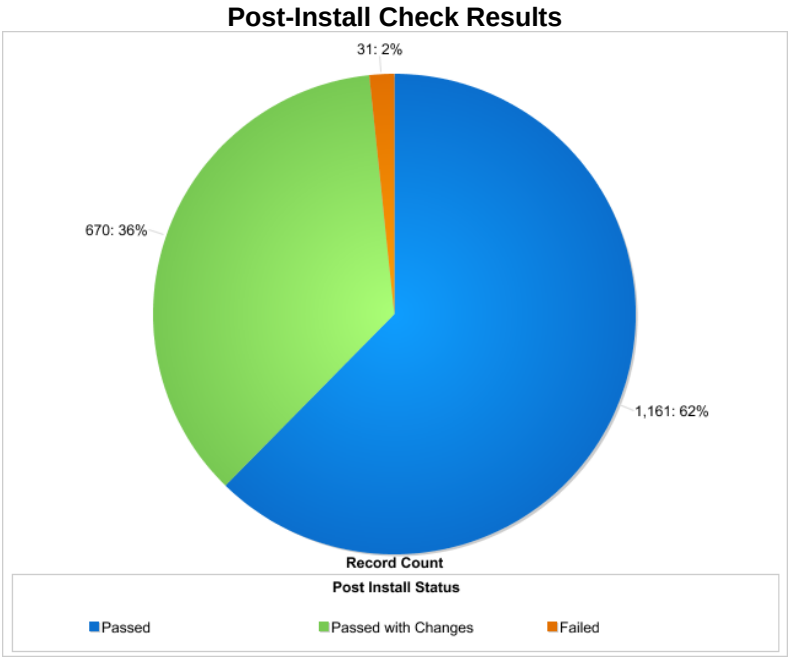
The Program achieved a balance of large and small site participation (many of which were small businesses) and a well distributed geographic coverage of the state. The table below shows the distribution of customers which received ESJ installations (both Surveyor and Contractor-installed) by store type. A substantial proportion of the "Convenience Stores" appeared to be owner-operated businesses.

| | Count of Accounts | Total Installed kWh | Average of Installed kWh |
|---|---|---|---|
| Grocery Stores | 4,283 | 45,378,102 | 10,595 |
| Convenience Stores | 2,555 | 14,173,198 | 5,547 |
| Restaurants | 1,042 | 2,856,604 | 2,741 |
| **Grand Total** | **7,880** | **62,407,364** | **7,920** |

Appendix A, figures A-3 and A-5 are maps that show locations of contractor-installed measures and DI installations, respectively. The maps illustrate the significant geographic reach achieved by the Program. Graphs of total annual customer cost savings as well as average savings per utility territory are also included as A-13(a),(b).

**Customer Care/Customer Satisfaction**

The Program performed post-install checks (PIC) at over 53% of rebated projects to ensure that Program Terms and Conditions were observed, quality standards were upheld, and that quantities claimed in invoices were actually installed. Over 62% of the inspected projects "passed" the PIC – all lighting, sensors and/or controls were found installed as invoiced, operating to the requirements of the Program. Projects that failed an initial PIC were frequently visited a second time after the Participating Contractor addressed specific concerns, most often these projects were "passed with changes". Similarly, projects that were found to have a slightly different installation quantity than indicated on paperwork submitted to the Program were rebated at the inspected quantity and also "passed with changes".




These post-install check site visits provided Surveyors additional experience - both technical and customer service - and allowed an opportunity to gauge customer satisfaction with the installation, equipment and Program processes. While Surveyors were on site to inspect the installation, they spoke to customer representatives; the resulting comments were incorporated into the post-install documentation and ultimately the Program database.

When asked specifically if they were satisfied with the installation, 97% of customers responded that they were (1,637 of 1,696 responses). Many provided additional comments including their preference for the quality and brightness of LED case lighting – specifically noting the improvement of product appearance. Frequently, customers expressed positive remarks about the Participating Contractors and noted the professionalism and consideration in the work performed.

Customer feedback was shared with the appropriate Participating Contractor and comments often resulted in action by the contractor. If customers identified other energy saving opportunities – additional LED case lighting potential, refrigeration motors, or maintenance for example – the contractor was contacted to pursue those prospects. The Program required contractor follow-up with customers who expressed dissatisfaction or for projects which did not meet Program Terms and Conditions prior to progressing within the rebate process.

## 3.14. f. Utilities

The Program received support from both Investor-Owned as well as Public-Owned Utilities. For utilities officially signed on as Participating Utilities, the Program was able to provide supplementary incentives (in addition to utility incentive, not exceeding the total project cost) for projects in those territories.

The list of twelve (12) ESJ Participating Utilities, in order of dates of participation, is:

1. Sacramento Municipal Utility District
2. Pacific Gas & Electric
3. Truckee Donner Public Utility District
4. Lodi Electric Utility
5. City of Palo Alto Utilities
6. Burbank Water and Power
7. San Diego Gas & Electric
8. Alameda Municipal Power
9. Southern California Edison
10. Roseville Electric
11. Turlock Irrigation District
12. Silicon Valley Power

Sacramento Municipal Utility District (SMUD) was the first utility to sign on with the Program from its inception and continued close involvement with the Program, including hosting an End of Program Surveyor event as well as providing speakers during the event who shared stories about their career paths and offered career advice to the surveyors. Along with SMUD, all Participating Utilities agreed that ESJ incentives could supplement applicable utility incentives for projects completed in the respective territories.

A total of 27 Utilities were touched by the Program in the form of surveys executed, DIs installed, or contractor-installed measures performed.

Table A-13(c), summarizing key Program outcomes for each utility, is included in Appendix A.

### 3.14. g. Equipment Manufacturers

The Program established partnerships with four (4) LED lighting manufacturers:

- ElectraLED
- GE Lighting Solutions
- LED Power
- Philips Lighting

Each manufacturer partner provided leverage to the Program in the form of time and resources necessary to participate in and contribute to the LED portion of each of the eight contractor training session. Contractors greatly benefited from the product information these manufacturer partners shared and the samples brought to the sessions which allowed for hands-on interaction. These partners also provided Program-specific product discounts to ESJ Participating Contractors.

### 3.14. h. Community Colleges

The Program partnered with the following colleges which provided training facilities and administrative/coordination resources to aid in the Program's conduct of Surveyor and Installation Contractor training. Some of these services were provided as leverage.

- Shasta College (Redding)
- Los Rios Community College (Sacramento)
- Kern County Community College (Bakersfield)
- El Camino Community College (Los Angeles)
- Cuyamaca College (San Diego)
- Mission College/Northern California Environmental Training Center (San Jose)
- Long Beach City College (Long Beach)

### 3.14. i. Technology Vendors

**Salesforce.com Foundation**

This nonprofit subsidiary of the San Francisco-based, global Customer Relationship Management (CRM) software company, SalesForce.com, provided generous financial support of software license costs. These licenses allowed for Surveyors, Participating Contractors and Program staff to manage data and operational effectiveness. PECI's Applications Development Group (ADG) also worked closely with Salesforce.com as PECI developed the customized database solution for the Program on the Salesforce.com platform.

**AT&T**

The Program also partnered with AT&T for the provision of iPhones and discounted service plans that were captured as leverage. The iPhones were the primary tool of the Surveyors as they conducted their store activities. The iPhones proved to be a cost efficient and effective tool, ideally suited to the needs of the Program.

## 3.15: Other Program Administration and Operations

### 3.15. a. Marketing and Public Relations

Recognizing the goals of the Program and associated critical success factors, ESJ marketing activities focused on the following key objectives:

- Launching the Program and cultivating a robust contractor network
- Realizing energy savings through refrigeration and lighting measure adoption by customers
- Generating positive visibility to increase public awareness of jobs created and energy saved

**Targeted Outreach:**

In addition, the Program identified several key groups of stakeholders with major roles in the overall success of the Program either through direct participation or in a facilitation role. These were identified in the Marketing Plan as Customers/Grocers, Installation Contractors, Utilities and the Public. Specific key messages were also developed for these targeted stakeholders and paired with communications plans addressing Customers and Installation Contractors.

**Key Marketing Tactics and Implementations:**

Based on these considerations, the Program developed and implemented the following:

- ***Program Logo***

  Developed exclusively for the Program; used consistently on deliverables and public-facing materials.

- ***Surveyor Uniforms (Polo T Shirt & Safety Vest)***

  Provided uniformity among Surveyors and associated them with the appropriate organizations (EnergySmart Jobs Program, Energy Upgrade California, California Conservation Corps).

- ***Information Card***

  The first in a series of marketing materials designed to provide a basic introduction to the Program and critical contact information. The cards were provided to Surveyors as well as Participating Contractors for distribution to potential customers.

- ***Discount Coupon Pad***

  Included in set of materials distributed to customers/grocers during a Surveyor store visit

- ***Pocket Folder***

  Branded element designed to hold the set of materials distributed by Surveyors during store visits.

- ***Brochures & Brochure Inserts***

  These key marketing elements provided an overview of the Program. Inserts were designed as a complementary piece to the brochure, containing information regarding target technologies and details of financial incentives provided by the Program.

- ***Awareness Postcard***

  Intended as a mailer for building awareness among store owners, these postcards were sent to stores in targeted geographies and followed up with a phone call to gauge interest in program participation. This initiative experienced an 8% response rate (program contacted by customer whom received a postcard), compared to an industry average response rate of 2-3% for direct mailings.

- ***Case Studies***

  The Program developed three case studies featuring three specific customers who had completed retrofit projects and received rebates from the ESJ Program – Save Mart, Ken's Liquor and Keil's. The intent of the case studies was to:
  - Share the experiences of various Program participants
  - Highlight the range of stores (from small convenience store to larger chains) who had benefited from the Program and the reach of the Program (both Northern and Southern California)
  - Reiterate the goals and benefits of the Program (energy savings and job creation)

- ***Program Road Map/Info graphic***

  Developed as a tool to illustrate the ESJ story; the roadmap follows the path of a Surveyor and identifies the key partners of the Program as well as the key activities performed by Surveyors.

- ***Website***

  This was the primary channel for partners as well as the public to access information about the Program and for the Program to provide updates. The website also housed online copies of all public-facing materials such as e-newsletters, videos, press releases, and the info graphic. Since the launch of the website in March 2011, it has seen over 8,500 visits (2,000 unique) which represents a strong return visit rate.

- ***Surveyor Video Profiles***

  Video profiles of three Surveyors were developed during the Program and made available on the website as well as shared through social media. These videos were designed to share the positive impact of the Program from the perspective of the Surveyors.

- ***e-Newsletters***

  Quarterly newsletters were developed as a means of outreach to stakeholders and partners. These newsletters were sent out via email to a distribution list of Program partners and provided a summary of ESJ Program-related events and updates from the past quarter. Compared with an industry average of 25% for open rates and 10 click-throughs, data collected for the program's 4 e-newsletters saw an average of 48% open rate (industry average 23%) with 28% click-through rate (industry average 6%) with zero spam reports.

**Public Relations (PR) and Media Sequencing Plan**

The Program also worked with major stakeholders, including both the California Energy Commission and the California Conservation Corps, on several PR activities, developing storylines around the incremental successes of the Program and distributing them through a variety of communication channels. The messaging focused on new jobs and energy savings. Additionally, events were organized to highlight Program partnerships, milestones, and penetration.

- ***Program Launch Media Event***

  Held in November 2010 at a store in Sacramento, this media event kicked off the ESJ program and included attendees from SMUD, PG&E, Participating Contractors as well as various program partners including leadership from the California Energy Commission, the California Conservation Corps, and PECI.

- ***Press Releases***

  The Program provided several press releases throughout; focusing on key accomplishments as well as highlights. Six original press releases led to nine positive pick-ups, including articles in Supermarket News, Progressive Grocer, and Greenbiz.com. The Program was also mentioned in two additional pick-ups, including an ARRA-related Wall Street Journal article.

## 3.15. b. Program Compliance

### Davis Bacon Act and California Prevailing Wage

On February 23, 2011, the Commission transmitted notice to the Program that the U.S. Department of Energy (DOE) had determined that the Program was exempt from Davis Bacon Act requirements.

### Historic Preservation

On March 29, 2011, the Program received notice from the Energy Commission's Cultural Resources staff that the work undertaken by the Program was exempt from State Historic Preservation Office review.

### Waste Management

The Program submitted its Waste Management plan to the Commission on May 19, 2011, and it was approved by the Commission on May 26. The Program prepared correlated Waste Management Plans designed to be executed by each Participating Contractor; one specific to contractors engaged in lighting projects, another specific to Controls contractors. The Program has collected completed forms and Waste Management Plans for each Participating Contractor that has completed projects receiving incentives under the Program.

### Buy American

On December 7, 2010, the Department of Energy provided an email concurring with the Program's analysis that "the installation of energy efficiency measures on privately owned commercial properties that are not leased to a governmental entity would not be subject to the Buy American requirement of ARRA." As all work ultimately performed under the Program was consistent with the condition defined above, the Buy American requirement was not observed.

### Permitting Compliance

On September 20, 2010, the Program transmitted to the Commission a letter outlining process to provide for Participating Contractors' compliance with all applicable federal and state laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the work. The process outlined by the memo and subsequently followed by the Program included:

- Provisions requiring compliance within the Contractor Participation Agreement
- Inclusion of the above provision in the Contractor Training curriculum materials
- Provisions ensuring compliance within the incentive worksheet for each project, executed by the contractor

## 3.15. c. On-Site Savings Measurement

The Program analyzed energy consumption for both pre- and post-project time periods for comparison of deemed energy savings versus calculated energy savings through site measurements at two sites. Each grocery store was surveyed as a participant of the Program and later implemented floating head pressure and floating suction pressure controls to their existing refrigeration systems. Analysis of two of the sites – one in Palo Alto and the other in San Francisco – was of compressor and condenser sub-meters. The other analysis – on sites in Fresno and Arroyo Grande – was an evaluation of interval data. The results of these analyses are summarized below. The Program submitted reports for these energy savings calculations and methodology at the time of completion; and copies are included in the package of final deliverables.

| Location | Deemed Savings | Calculated Savings | Savings Delta | Realization Rate |
|---|---|---|---|---|
| San Francisco | 82,134 annual kWh | 89,000 annual kWh | 6,866 | 1.08 |
| Palo Alto | 55,175 annual kWh | 43,400 annual kWh | (11,775) | 0.79 |
| Fresno | 84,923 annual kWh | 13,302 annual kWh | (71,621) | 0.16 |
| Arroyo Grande | 79,630 annual kWh | 135,882 annual kWh | 56,252 | 1.71 |

# Section 4: Conclusions

This section addresses major findings, best practices and lessons learned.

**Choice of Measures:**

The measures selected for implementation on the Program proved to be well suited to further many of the goals of the Program:

- Broad market opportunity and demand across customer demography and geography
- Accessible for many contractors to install
- Technically supportable by CCC surveyors, for the most part
- Cost structure allowed for high number of installations to further market transformation
- Realization of significant energy savings at a favorable cost structure

The Program did determine that the Controls measures proved to be a challenge for CCC Surveyors to identify as opportunities as well as post-install check due to the technical experience required. Ultimately, PECI field staff fulfilled the post-install check function for all Controls projects performed on the Program.

The high level of customer satisfaction (97%) shown amongst customers demonstrates their receptivity to the technologies, their appreciation of the savings realized and in many cases, the visual benefits and increased sales believed to result from the LED case lighting.

**Technology Infrastructure:**

The technology infrastructure incorporating the Salesforce.com-based PTS system and data collection via the iPhone application proved to be a very successful mechanism to orchestrate Program operational activity. The PTS system:

- Housed all customer and efficiency project data
- Provided insight into project status for all related entities
- Facilitated incentive processing
- Allowed for insight into key Program statistics and reporting

The flexibility of the portal access allowed for seamless use by multiple parties in several locations:

- PECI core team in San Francisco, Portland and in field locations
- The CCC teams in various locations throughout the state
- Participating Contractors
- The Energy Commission and Participating Utilities
- Gilbert Associates (to execute incentive processing tasks)

The only significant technical impediment was that in some areas of California, CCC Surveyors experienced connectivity issues with phone service, but this was circumvented by using “paper surveys” as back-up when this situation occurred.

**Lead Submission & Survey Capacity:**

In an effort to accelerate uptake of the Program and to maximize the contractor participation, the Program accepted customer referrals from Participating Contractors. In these cases, the contractors were assigned to the customers they referred to the Program, subject to confirmation by the store owner. While the Program benefited substantially from leveraging Participating Contractor selling capabilities, it did not anticipate the following issues which arose when several contractors were able to sign on a significant number of customers and submitted them to the Program early in the Program term:

- Despite having several Surveyor teams located throughout California, the Program’s field operations structure was not initially designed to complete surveys concentrated primarily in the PG&E territory in a short amount of time.
- The size of California also meant that some stores were located in remote geographies not easily accessible with a turn-around time that was satisfactory to some contractors.

- In their haste to sign on customers, some Participating Contractors did not adequately orient several of their customers to aspects and requirements of the Program. In some cases, CCC surveyors were not able to gain access to stores to perform surveys, despite the fact that these stores had been submitted as leads, because customers were confused about the Surveyors' role on the Program. These situations resulted in a period of inefficiency in Program operations, and frustration amongst customers, contractors, and the CCC.
- Resulting from the initial high volume of referrals, some customers faced a lag time between the initial outreach by contractors and the follow-up visit by Surveyors, leading some of these customers to turn Surveyors away as they were no longer interested in participating in the Program.

To address the above issues, the Program put in place several measures and initiatives:

- Started the Surveyor Internship Initiative to help address Participating Contractors with a large set of referrals/leads while minimizing transportation and access challenges for Surveyors.
- Initiated the Incentive Reservation System for the lead submission process which had more stringent requirements, including completed and signed customer participation agreements. These agreements provided a strong indication that customers had already been provided information about the program by Participating Contractors, and were also anticipating a visit by Surveyors.
- Imposed a soft cap on number of leads a contractor could submit in a specific utility territory.
- Stopped accepting new leads in July 2011, due to the fact that incentive funds had been fully committed to projects, and a large backlog of unfunded leads was already in place.

Key Lessons Learned:

- Consider providing guidelines on the submissions per contractor and per region based on Program survey capacity.
- Set expectations regarding timeframes for survey visit amongst Participating Contractors and customers.

**Intricacies & Overall Effectiveness of Cold Calling:**

The Program experienced significant difficulties, particularly in the early stages, in successfully performing cold calls with customers, either via a phone call or a store visit. Smaller stores, which comprised a majority of the target market segment, were usually manned by a minimal number of employees kept busy managing all aspects of operations. These employees often did not have the ability to sign off on the necessary agreements. In addition, Surveyors faced a steep learning curve acquiring the variety of skills necessary to conduct successful cold-calls; including salesmanship, customer interaction, knowledge of Program details.

The Program and its Surveyors did see a marked improvement in the success rates of cold colds in the latter stages as Surveyors developed a better understanding of successful methods to approach store owners. In addition, Program Field staff conducted frequent ride-alongs with Surveyor teams; providing professional guidance and feedback regarding their outreach performance.

Key Lessons Learned:

- Soft skills such as salesmanship and communication require practice and frequent reinforcement; it should be expected that roles involved in marketing and selling the Program could take more time to mature.
- There could be a greater focus on building soft skills during initial program training.

**Selling Cycle Disparity:**

The Program focused on two main energy efficiency technologies, LED case lighting and Refrigeration Controls (which required the installation or upgrade of an Energy Management System). While both technologies are key to the operations of refrigeration units at commercial retail stores, their respective project scope and associated costs had the potential to be of very different magnitudes. Small LED

projects had total budgets of approximately $2,500, whereas large LED projects at grocery stores and Controls projects were typically ranged from $30,000 to $50,000. As can be expected, projects with a smaller overall cost as well as upfront capital investment were, in general, more palatable particularly to small businesses and their approval could be achieved expeditiously. This was confirmed by project pipeline trends observed by the Program: small LED projects constituted the majority of the projects sold to customers, submitted as referrals to the Program, and completed by contractors early in the Program lifecycle. These small, quickly approved projects had the effect of crowding out larger projects as they absorbed a substantial portion of the incentive budget at the Program's outset. Although the Program was eventually able to reassign funds from closed small LED projects to Large LED and Controls projects waiting in queue, these larger projects did face an inherent disadvantage in accessing the limited pool of program incentives.

Key Lessons Learned:

- For a program with a short life span, focus on technologies and measures with similar selling cycles.
- Consider creating a mechanism to allow funding to be allocated to specific measures/technologies, possibly though a pre-identified measure mix/ratio.

**Geographic Diversity:**

The Program's mandate was to reach and benefit a broad coverage of California's geography. Though the Program succeeded to a large extent in this objective, there were a few key structural challenges that are worth noting:

- The Program's ability to convince utilities to participate in the Program (allowing utility incentives to be paired with ESJ incentives) as well as the timing of utilities' decision had a major impact on Program activity level in those geographies.
- Level of utility incentives available affected the geographic focus of contractors, as well as the overall willingness of customers to move forward with retrofit projects.
- Proximity of Participating Contractors to customer locations, and density of customer opportunities impacts the contractors' desire to reach into remote geographic areas.

**Training Efficacy:**

Program training for both Surveyors as well as contractors consisted of two aspects; learning about the EnergySmart Jobs Program and the role played on the Program, as well as upgrading knowledge of training participants with regards to energy efficiency and technologies. The Program successfully achieved these objectives, however, several lessons stood out with regards to how the training could be conducted more effectively.

Key lessons learned:

- Understanding that a majority of contractors run small businesses and have limited manpower as well as time, the Program was able to shorten the length of the contractor training course while delivering all the necessary information.
- Surveyors benefited from on-the-job experience as well as real-time coaching from Program field staff particularly with regards to selling the Program to store owners. Future training could include a greater focus as well as more practice with soft skills involved in visiting and communicating with store owners.

**Hiring Requirements:**

One of the main goals of the Program was to stimulate the economy and spur job creation. It was anticipated that contractors would experience an uptick in the business opportunities available as a consequence of the incentives available to customers for their retrofit projects. While the Program proved successful in spurring on new projects, the initial plan to require every Participating Contractor to have at least one new hire did not fully account for the ways in which contractors were dealing with the overall economic downturn. In addition, not all contractors benefited from the program to the same extent in terms of the projects sold and completed with Program incentives.

Following feedback and conversations with Participating Contractors as well as the Energy Commission, the Program updated the hiring requirements for Participating Contractors, allowing for fulfillment of requirements through the reporting of part-time hires as well as retained employees. The range of options available to a contractor was dependent on the estimated benefit a contractor experienced on the program, i.e., total EnergySmart Jobs incentives assigned to all the contractor's ESJ-funded projects.

**Incentive Processing Standards and Contractor Cash Flow Issues**

The Program established and adhered to an appropriate standard for incentive processing of completed projects, striving to ascertain that terms and conditions had been met, projects were post-install checked with appropriate frequency and that paperwork met appropriate standards. Compliance with these standards led to some Program start-up issues with contractors because a high proportion of submitted paperwork was not deemed to be adequate to support payment of incentives despite the fact that contractor training included details on these requirements. Over time, as Participating Contractors became practiced in Program requirements for paperwork, this issue diminished in scale. Early in the Program term however, a few high volume contractors did express concerns on cash flow constraints, as they had made large outlays on projects and had yet to receive incentive payments as rapidly as they had desired. Some Participating Contractors turned to financing organizations and assigned incentive payments to them in return for cash for operations.

This issue could have been mitigated by limiting the number of approved projects for each contractor at any given time, or putting into place a more established mechanism to provide an operational funding mechanism for Participating Contractors.

**California Public Utility Commission (CPUC) Cites ESJ Program as Model**

EnergySmart Jobs was mentioned in a report filed in December 2011 by the Energy Division at the CPUC that provided recommendations for improving the performance of IOU EE portfolios in the 2013-2014 timeframe and beyond. The report, entitled *"Proposed Changes to Utility Energy Efficiency Portfolios for the 2013-2014 Transition Period"*, contained the following two excerpts mentioning ESJ as a potential model:

> *"Utilize the **Energy Smart Jobs** model used in American Recovery Reinvestment Act (ARRA) projects for outreach to the small business market. This could also be a good platform for pilots of the Building Energy Asset Rating System (BEARS)."*
>
> *"Investigate using an **Energy Smart Jobs (ESJ)** approach to ensure that the first contact gathers all of the relevant information required for both the basic and more comprehensive analyses. On a basic audit, the first contact should have the tools to present a set of measures and approximate savings before leaving the site."*

The Program was also referenced in a footnote, below, to the following excerpt:

> *The Direct Install program should increase coordination with Local Government Partnerships and Business Improvement Districts to increase participation of mom and pop and hard to reach customers*.*
>
> **The Energy Smart Jobs (ESJ) model used in the ARRA projects would be ideal for this type of outreach. If utilized, it could also be a good platform for BEARS piloting.*

# Section 5: Technology

The Program accomplished the following product or technology transfer activities during the term of the Program:

**Project Tracking System (PTS):**

PECI arranged for the availability of sufficient Salesforce.com CRM software licenses to support the Program. PECI performed customization of the Salesforce.com customer relationship management platform to accommodate the Program requirements and provided a license of the customized PTS system to the Energy Commission as part of the contract.

**iPhone Application:**

PECI created an iPhone application designed to interface with the PTS system, providing the capability for CCC surveyors to collect and input data collected at customer locations in real-time.

**NAICS Data:**

PECI negotiated the license of NAICS data for use during the Program term. This data consisted of store names, addresses and other key information to assist in targeting Program activities.

**Customer Data:**

One of the core missions of the Program was to conduct store surveys across the state so that basic information about customers and facilities could be collected and entered into the PTS database. This information provided the basis for identifying the nature and quantity of energy efficiency opportunities, and established the base case for subsequent incentive processing activity. 6,025 surveys were completed during the Program term. Data collected during these surveys was housed in the PTS system for use during the Program term. As part of the Program close-out process, the data will be transmitted to the Energy Commission in accordance with terms within the Program's Agreement and in keeping with confidentiality terms established in the Program's Customer Participation Agreements.

**Program Website:**

The website was the primary channel for partners as well as the public to access information about the Program and for the Program to provide updates. The website also housed online copies of all public-facing materials such as e-newsletters, videos, press releases and the info graphic. In accordance with the Program's Agreement, the website will be shut down shortly after the close of the Program term.

**Miscellaneous Marketing Communications:**

The Program developed three case studies featuring three customers who had completed retrofit projects and received rebates from the Program – Save Mart, Ken's Liquor and Keil's. Also, quarterly newsletters were developed as a means of outreach to stakeholders and partners. These newsletters were sent out via email to a distribution list of program partners and provided a summary of ESJ program-related events and updates from the past quarter. Files of these communications will be submitted as part of the Program close-out deliverables.

**Surveyor Training Video:**

The Program created a short surveyor training video to assist in training session for CCC surveyors. The Program will transmit a final version of the video to the Energy Commission in a mutually agreed upon format as part of the Program closeout process.

**Training Curricula:**

The Program created training curriculum including presentations, handouts and quizzes to facilitate contractor and surveyor training. The Program will transmit final versions of these materials to the Energy Commission as part of the Program closeout deliverables.

**On-Site Energy Savings Measurement Reports:**

The Program analyzed energy consumption for both pre- and post-project time periods for comparison of deemed versus calculated energy savings through site measurements at two grocery stores – one in Palo Alto and the other in San Francisco. Reports summarizing the findings for each site were submitted to the Program Contract Manager upon completion. The Program will transmit final versions of these reports to the Energy Commission as part of the Program closeout deliverables.

**Association of Energy Service Professionals (AESP) Presentation:**

PECI prepared a white paper about the Program and made a presentation based on that work at the Association of Energy Service Professionals (AESP) convention held on February 9, 2012. The Program will transmit the final version of the white paper to the Energy Commission as part of the Program closeout deliverables.

## Section 6: Deliverables

Below is a list of deliverables under the contract, including a brief description, due date and date of delivery.

| Deliverable | Brief Description | Due Date in Agreement | Date Delivered to CEC |
|---|---|---|---|
| Implementation Plan | Program implementation plan including:<br>Policies and procedures<br>Incentive Processing (Confidential)<br>ESJ Workflow (lead to opportunity)<br>Site Survey Workflow | 9/10/10 | 8/26/2010 (Draft) |
| Monthly Report Template | Template for Monthly Report | 9/10/10 | 8/26/2010 |
| Monthly CAAT Report | California ARRA and Accountability Tool | On going | Monthly |
| Monthly Invoice | Monthly Invoice with detail back-up and support; | On going | Monthly; Semi-monthly beginning March, 2011 |
| Leverage Funding Table | Leverage Funds reporting table | 9/10/10 | 8/26/2010 |
| CCC Statement of Work / Contract | Sub-contractor Contract | As completed | 11/2010 |
| Aztec Contract | Sub-contractor Contract | As completed | 11/2010 |
| Process doc: Permitting Process | Description of Project Permit Process | | 9/20/2010 |
| Process doc: Historic Preservation Process | Description of Historic Preservation Process | | 10/2011 |
| Process doc: Waste Management Process | Description of Waste Management Process | | 5/19/2011 |
| DBA and CCC | Davis-Bacon Act as applicable to CCC | As completed | 11/15/2010 |
| DBA and Installation Contractors | Davis-Bacon Act as applicable for Installation Contractors | As completed | 12/17/2010 |
| Made in America Process | Description of Made in America product acceptance | As completed | 12/7/2010 |
| Realizing Utility Leverage Process | Description of Leverage Realization process | | 11/2010 |
| Time and Materials vs. Cost Plus Write Up | Prime Contract description | As completed | 11/2010 |
| Gilbert Associates Contract | Community college partner agreement | As completed | 11/2/2010 |
| Kern Community College Statement of Work/Leverage Agreement | Community college partner agreement | As completed | 12/20/2010 |
| Los Rios Community College Leverage Agreement | Community college partner agreement | As completed | |
| Cuyamaca Community College Statement of Work/Leverage Agreement | Community college partner agreement | As completed | 12/10/2010 |
| Mission Community College Leverage Agreement | Community college partner agreement | As completed | |
| Shasta Community College Statement of Work/Leverage Agreement | Community college partner agreement | As completed | 12/17/2010 |
| El Camino Community College Statement of Work//Leverage Agreement | Community college partner agreement | As completed | 12/14/2010 |

| Deliverable | Brief Description | Due Date in Agreement | Date Delivered to CEC |
|---|---|---|---|
| AT&T Contract | Technology partner agreement | As completed | 11/15/2010 |
| Salesforce.com Contract | Technology partner agreement | As completed | 10/22/2010 |
| Leverage Fund Letter / Email from Long Beach City College | Acknowledgement letter from Partner to participate in Leverage for Program | As completed | 11/15/2010 |
| LED Power Statement of Work/Leverage Agreement | Manufacturer partner agreement | As completed | 2/17/2011 |
| ElectraLED Statement of Work/Leverage Agreement | Manufacturer partner agreement | As completed | 2/17/2011 |
| GE Lighting Solutions Statement of Work/Leverage Agreement | Manufacturer partner agreement | As completed | 2/17/2011 |
| (LACC) Sub-Contractor Agreement with CCC | Sub-Contractor sub agreement with LACC | As completed | 11/2010 |
| SURVEY: Surveyor Scripts (1-6) | CCC - Cold Call Script<br>CCC - Scheduling Survey<br>CCC - Recommend Lead Script<br>CCC - 2 Week Follow Up Script<br>CCC - Post-Install follow up Script<br>CCC Surveyor - In-Store Survey Script | | 11/2/2010 |
| Program Logo | ESJ Logo design | | 9/14/2010 |
| Surveyor Vests | ESJ Surveyor Vest design | | 9/14/2010 |
| Surveyor Polo Shirts | ESJ Surveyor Polo shirt design | | 9/14/2010 |
| Sample Maintenance and Monitoring Agreement for Contractor's reference | Controls Maintenance and Monitoring Agreement for Contractor's reference | | 3/8/2011 |
| Request For Quote: EMS distribution | RFQ for EMS distribution / Cover letter | | 2/18/2011 |
| Work papers for Measure energy Savings | CFL - Work papers for determining and evaluating energy savings for Non-refrigerated CFL's<br>CFL Walk In - Work papers for determining and evaluating energy savings for CFL's in Walk-in refrigeration units<br>Beverage Merchandiser - Work papers for determining and evaluating energy savings for Beverage Merchandiser Cooler Controllers<br>LED Case Lighting - Work papers for determining and evaluating energy savings for LED case lighting installation | | 3/2/2011 |
| Measure Mapping (all measures) | DEER Map for measure energy savings | | 3/2/2011 |
| Strategic Marketing Plan (Customer Outreach) | ESJ Customer Outreach Marketing Plan | | 10/25/2010 |
| PR and Media Sequencing Plan | ESJ PR & Media Plan | | 10/25/2010 |
| Communications Plan – Customer Outreach | Reach out plan to Customers | | 10/25/2010 |
| Installation Contractor Marketing Plan | Reach out plan to Installation Contractors | | 10/25/2010 |
| Program Information Sheet | ESJ Program Information Sheet | | 11/1/2010 |
| Terms and Conditions for each Measure | ESJ Terms and Conditions for each measure installed | | 5/24/2011 |
| Coupons | Coupon description / distinction for | | 10/28/2010 |

| Deliverable | Brief Description | Due Date in Agreement | Date Delivered to CEC |
|---|---|---|---|
| | customers | | |
| Info Card | Info Card distributed to customer at time of survey | | 10/28/2010 |
| Program PowerPoint Template | ESJ Presentation PowerPoint Template | N/A | 12/17/2010 |
| Training Certificates | Training completion certificate for Surveyors | | 12/17/2010 |
| Form A: Customer Participation Agreement | ESJ Customer Participation Agreement – Program participation including:<br>Access Agreement<br>Confidentiality<br>Acceptance/Waiver<br>Multi-Site Addendum | | 10/13/2010 |
| Form B: Incentive Worksheet | Worksheet for determining amount of incentive Including Payment Release | | 10/13/2010 |
| Form C: Direct Install Agreement | ESJ Direct Install Agreement | | 10/13/2010 |
| Form D: Contractor Participation Agreement | ESJ Contractor Participation Agreement | | 10/13/2010 |
| Form E: Customer Authorization for Project Sponsor | ESJ Customer Authorization providing release of information to project sponsor | | 12/23/2010 |
| Training Schedules | Schedule of training for Surveyors and Contractors | On-going | Monthly Report |
| Surveyor Training: Curriculum and Training Presentations | Surveyor Fundamentals Table of Contents<br>1. EnergySmart Jobs Program Structure<br>2. Energy Efficiency Fundamentals<br>3. Talking to The Customer<br>4. Compact Fluorescent Lamps (CFL)<br>5. Beverage Merchandising Controllers<br>6. LED Case Lighting Systems<br>7. Refrigeration - Floating Head and Suction<br>8. Surveyor Field Safety<br>9. How to Survey a Store.<br>10. LED Post-Installation Check | 9/30/2010 | 11/2/2010 |
| Surveyor Training Quizzes | Quizzes given upon Surveyor Training completion:<br>1. Energy Efficiency Fundamentals<br>2. How to Survey a Store<br>3. LED Case Lights<br>4. Program Structure<br>5. Refrigeration Controls<br>6. Talking to the Customer | | 11/2/2010 |
| Installation Contractor Shared Content Training: Curriculum and Training Presentations | Contractor Training on Controls<br>1. EnergySmart Jobs Program Structure<br>2. Energy Efficiency Fundamentals<br>3. Know A Grocer<br>4. Contractor Participation<br>5. LED Case Lighting Overview<br>6. Refrigeration Controls Strategies Overview<br>7. Project Tracking System Overview<br>8. Program Hiring Requirements & Davis Bacon Act | 9/30/2010 | 11/2/2010 |
| Controls Training Content | Refrigeration Controls Contractor | 9/30/2010 | 3/9/11 |

| Deliverable | Brief Description | Due Date in Agreement | Date Delivered to CEC |
|---|---|---|---|
| | Training days 1-3 as presented by Aztec | | |
| User Guides: PTS for Surveyors | PTS user guide for Surveyors | | 3/9/11 |
| Quick Start Guide: PTS for Utilities Programs | PTS Quick Start guide for Utilities | | Submitted with Final Deliverables |
| Quick Start Guide: PTS for Participating Contractors | PTS Quick Start guide for Participating Contractors | | Submitted with Final Deliverables |
| Survey Fields / Paper-based Survey | Paper Survey fields and design | | 11/1/2010 |
| Partners' Letters of Commitment (LoC) | Letter for PECI (Mission)<br>LoC - Cuyamaca<br>LoC – Aztec Energy Partners<br>LoC – Ca. Conservation Corps<br>LoC - El Camino Community College<br>LoC - ElectraLED<br>LoC –GE Lighting Solutions<br>LoC - Kern Community College<br>LoC – LED Power<br>LoC - Philips<br>LoC - Salesforce.com<br>LoC - Shasta Community College<br>LoC - SMUD<br>LoC – Los Rios Community College | | Submitted as received throughout Program term |
| Logic Model and Description | Program activity diagram and description, results/expected outcomes and progress indicators | | 1/19/2011 |
| Program Schedule Gantt Chart | High level timeline of Program deliverables | 8/26/2010 | 8/26/2010 |
| Schedule of Deliverables (Reporting Requirements) | Detailed list of contractual deliverables and updated timeline of delivery | 8/26/2010 | 8/30/2010 |
| Training video on CD | For use during New Surveyor Training | | Submitted with Final Deliverables |
| Critical Program Review #1 | Critical Program Review #1 Agenda and PowerPoint | 1/19/2011 | 1/19/2011 |
| CPR #2 | Critical Program Review #2 Report | 5/19/2011 | 6/20/2011 |
| CPR #3 | Critical Program Review #3 Agenda and PowerPoint | 12/16/2011 | 12/16/2011 |
| Surveyor Video Profile 1 | Surveyor profiled for on-line reference | | 9/20/2010 |
| Surveyor Video Profile 2 | Surveyor profiled for on-line reference | | 11/11/2011 |
| Surveyor Video Profile 3 | Surveyor profiled for on-line reference | | 12/29/2011 |
| ESJ Info-graphic | Brochure with visual of Program process | | 9/2011 |
| Video Series Press Release | | | 2/2012 |
| Surveyor Incentive Plan (SMAP!) | Budget, process and detail of surveyor incentive plan | | 8/2011 |
| ESJ Website – 3 phases | | | Staged as developed |
| Partners' Letters of Commitment (LoC) - Utilities | Pacific Gas & Electric – Email<br>Truckee Donner Public Utility District – Email<br>Lodi Electric Utility – LoC<br>City of Palo Alto Utilities – LoC<br>Burbank Water and Power – LoC<br>San Diego Gas & Electric – LoC<br>Alameda Municipal Power – LoC | | Submitted with Final Deliverables |

| Deliverable | Brief Description | Due Date in Agreement | Date Delivered to CEC |
|---|---|---|---|
| | Southern California Edison – Email<br>Roseville Electric – LoC<br>Turlock Irrigation District – LoC<br>Silicon Valley Power – Email | | |

***NOTE: If Date of Delivery to CEC is more than one month later than the original Due Date in Agreement, provide an explanation. ***

## Section 7: Budget

Below is the approved budget under the contract by budget category; with a brief description, budget amount and actual expenditure for each category.

| Budget Category or Deliverable | Budgeted* | Actual Expenditure | Percent Expended |
|---|---|---|---|
| **Administrative Tasks Sub Total** | **$173,526.34** | **$155,687.43** | **90%** |
| 1.1 Attend Kick-off Meeting | $4,709.39 | $4,670.05 | 99% |
| 1.2 CPR Meetings | $16,737.71 | $16,693.98 | 100% |
| 1.3 Final Meeting | $5,514.24 | $5,003.21 | 91% |
| 1.4 Monthly Progress Reports | $126,356.00 | $109,181.86 | 86% |
| 1.7 Identify and Obtain Leverage Funds | $20,209.00 | $20,138.33 | 100% |
| **Program Delivery Tasks Sub Total** | **$18,635,191.35** | **$18,011,966.20** | **97%** |
| 2.1 Program Management | $818,176.31 | $776,723.86 | 95% |
| 2.2 Implementation Plan | $197,390.44 | $197,390.44 | 100% |
| 2.3 Implement Incentive Processing Structure | $6,625.31 | $6,621.22 | 100% |
| 2.4 Finalize and Package Training Curricula | $117,068.02 | $117,068.02 | 100% |
| 2.5 Build PR and Market Outreach Components | $401,250.43 | $295,012.41 | 74% |
| 2.6 Workforce Development | $516,146.27 | $509,812.36 | 99% |
| 2.7 Participant (Owner) Recruitment | $94,976.51 | $90,923.12 | 96% |
| 2.8 Targeted Measure Audits and Direct Retrofit Installations** | $2,739,467.79 | $2,609,161.86 | 95% |
| 2.9 Installation Contractor Retrofits | $657,806.00 | $630,618.16 | 96% |
| 2.10 Retrofit Quality Assurance/Customer Care | $187,537.92 | $180,177.98 | 96% |
| 2.11 Verification of Energy Savings** | $1,356,199.75 | $1,188,069.38 | 88% |
| 2.12 Incentive Funding Mechanism | $11,370,766.30 | $11,258,659.54 | 99% |
| 2.13 Program Exit Management | $171,780.30 | $151,727.86 | 88% |
| **TOTAL** | **$18,808,717.69** | **$18,167,653.63** | **97%** |

*Budgeted amount reflects final amount inclusive of all executed reallocations and amendments.

**Explanations of Items with Over 5% Unexpended:**

Overall spending by the Program was 97% of the original contract amount. The Program actively managed the budget, and pursued a formal budget reallocation in the fall of 2011 to balance and better align task budgets with spending outlooks. This reallocation resulted in $642k of additional funding for incentives as well as optimized outcomes for spending by task.

Ultimately, despite the reallocation, there were a few tasks that experienced spending below 95% of task budget. One significant factor that contributed to this outcome was the fact that the Program had numerous tasks, increasing the likelihood that task variances would occur. Also, the Program was careful in managing the risk of overspending task budgets, so there was built-in tendency for residual budget particularly for those tasks with significant activity late in the lifecycle of the Program.

A brief explanation of task variances in excess of 5% follows:

**Task 1.3 Final Meeting**

- This very small task budget had a residual amount due to the decision to hold the meeting in San Francisco rather than Sacramento, thus reducing travel time and expenses.

### Task 1.4 Monthly Reports

- This task features a relatively small amount of residual budget; and the determination was made not to re-allocate to avoid risk of ultimately overspending.

### Task 2.5 Marketing

- A significant portion of this budget was not expended as a decision was made not to hold an end of Program Press event.

### Task 2.11 Verification of Energy Savings

- This task budget was dominated by CCC labor. The determination was made not to re-allocate funding so that the Program could make the greatest possible effort to optimize the CCC's activities (training opportunities, direct installations, post-install checks) while they remained active on the Program. CCC operations, and thus spending, were impacted by the California State hiring freeze which limited their ability to put into place the complete infrastructure that was originally anticipated in their budget. The CCC ultimately expended 89% ($2.3M) of their total budget of $2.7M.

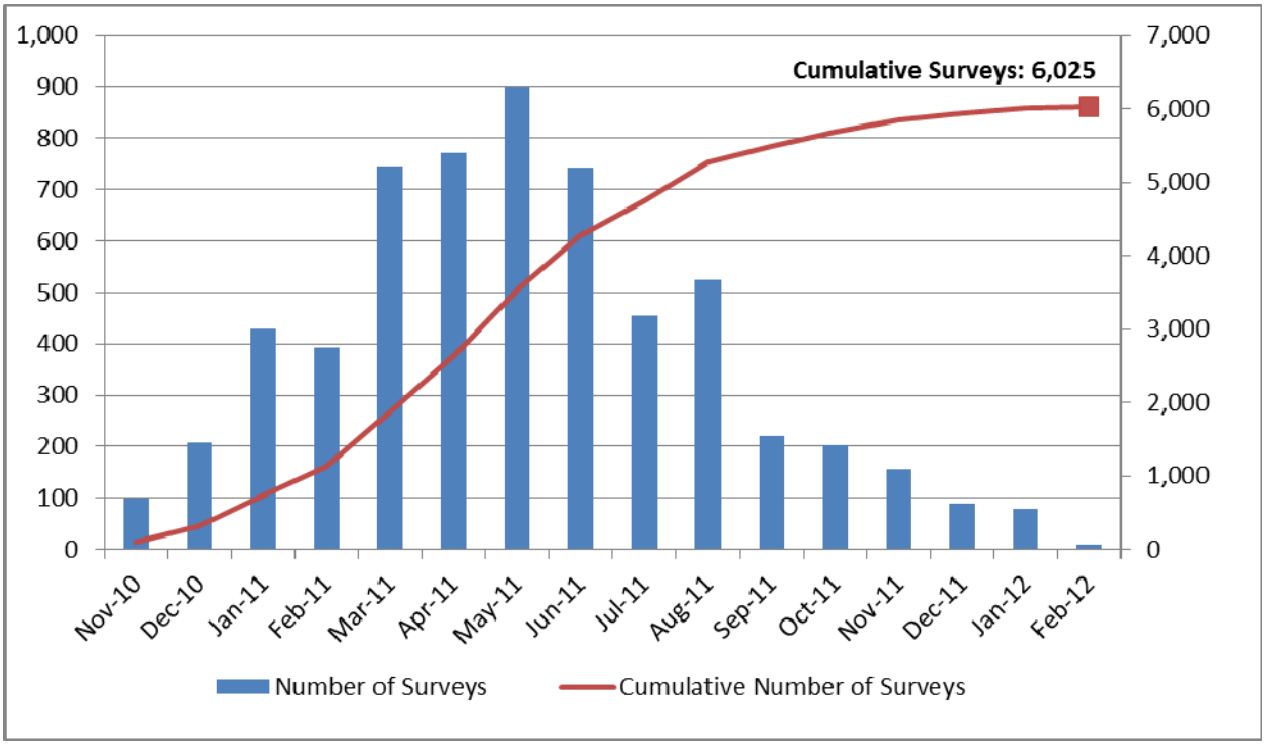
### Task 2.13 Program Exit Management

- This task's activities were heavily weighted to the end of the Program timeframe. At the time of the re-allocation, there was limited visibility into the details of activities anticipated, and thus the burn rate and spending outcome associated with the task. At the time of the re-allocation, the determination was made not to re-allocate funding from this task.

# Section 8: Appendices

## Appendix A: Illustrative Exhibits

### A-1 Monthly Surveys Completed



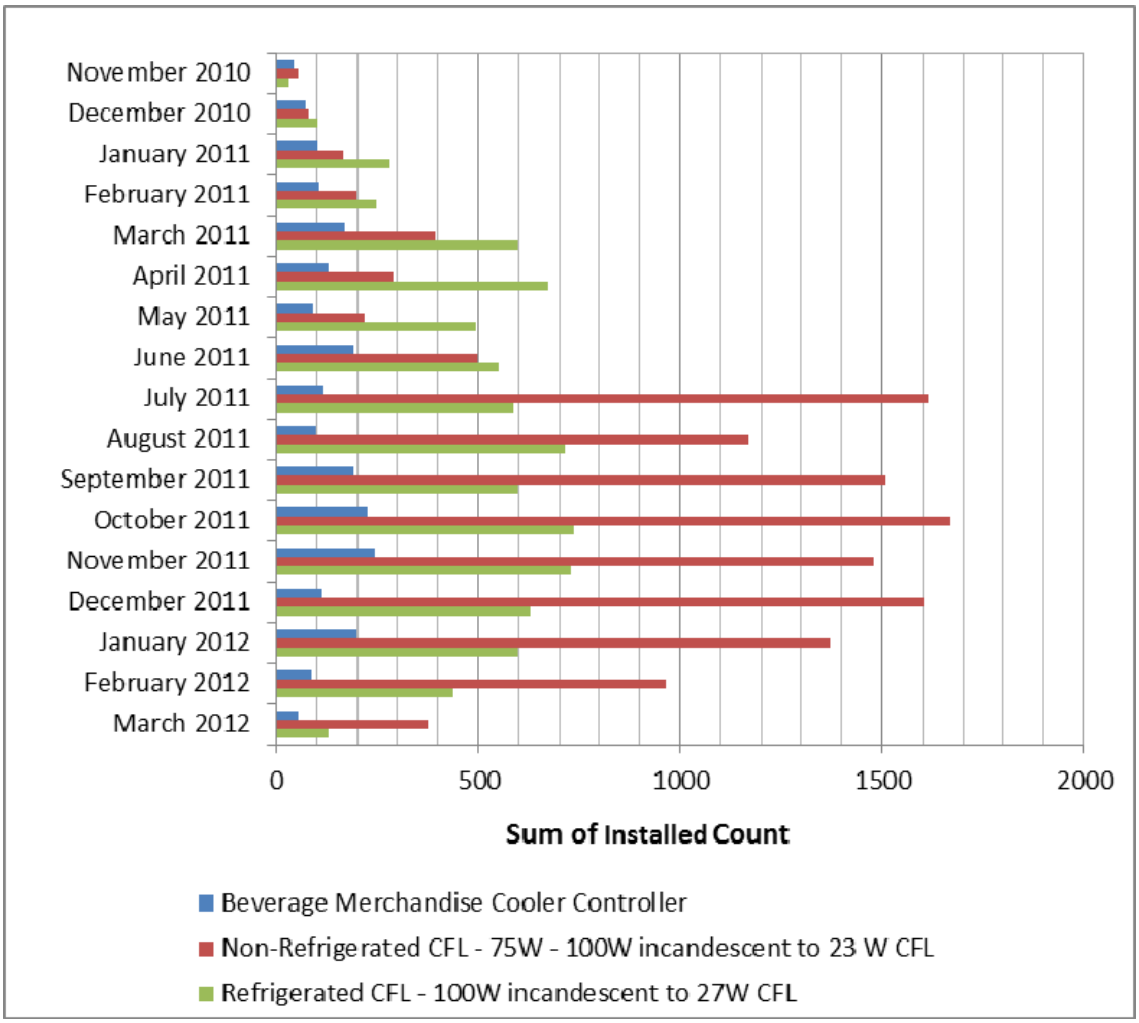
## A-2 Map of Surveys Completed


Colors and icons represent different utilities

## A-3 Map of Contractor Installed Measures


Blue circles represent LED projects
Yellow circles represent Controls projects

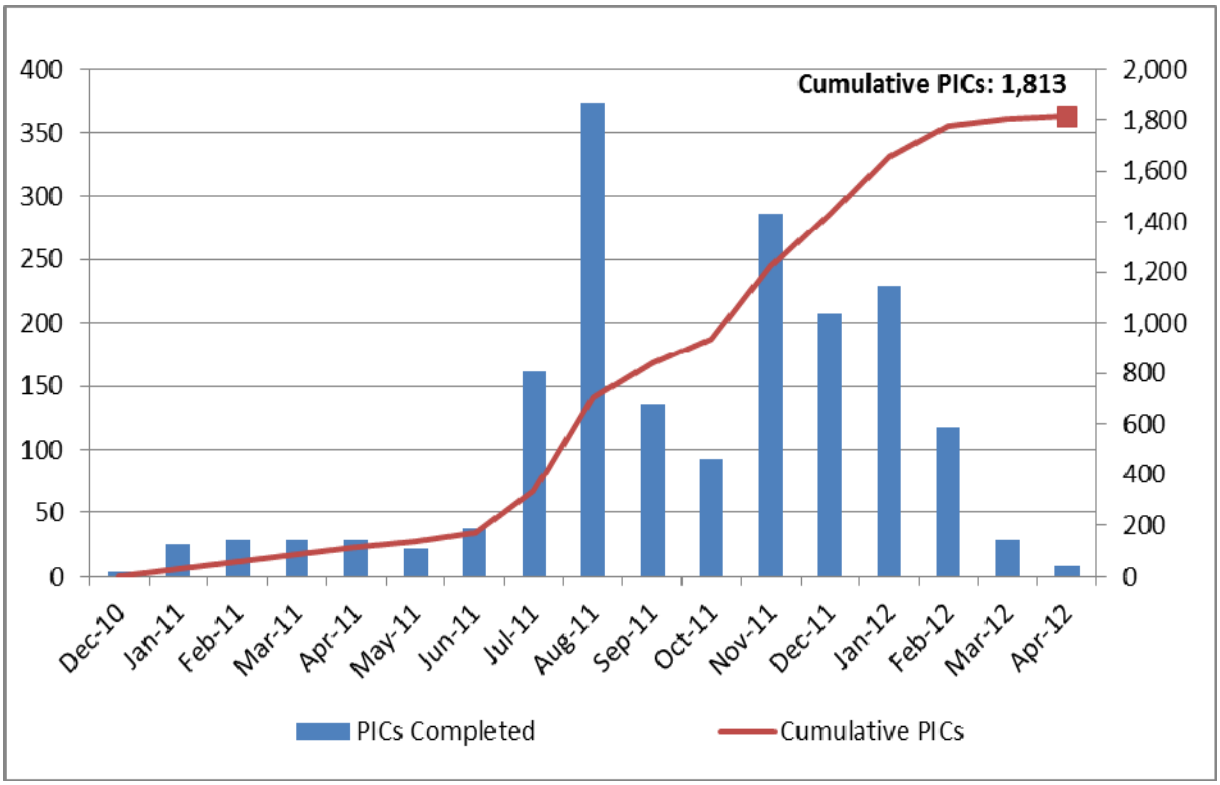
## A-4 Monthly Direct Installs



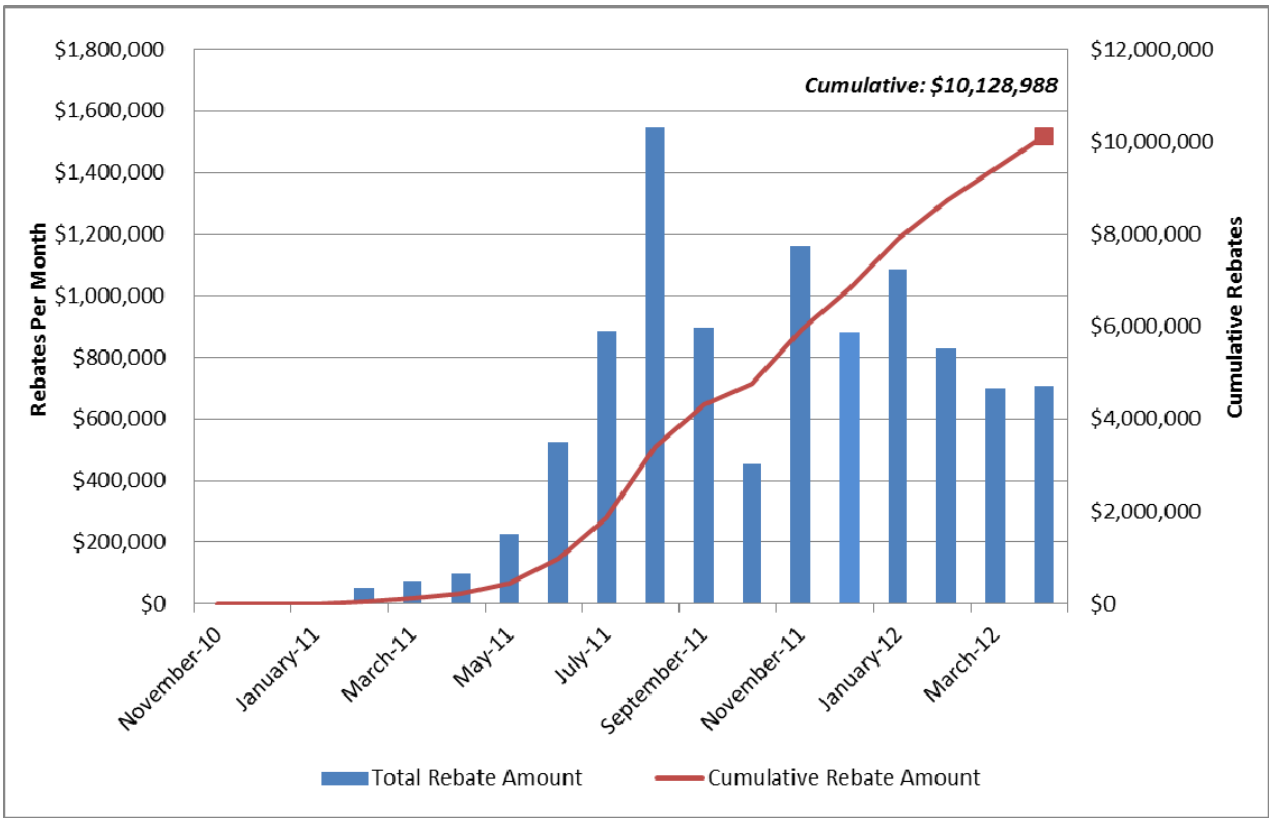
## A-5 Map of Direct Installs


Blue circles represent Beverage Merchandise Controller
Red circles represent non-Refrigerated CFLs
Green circles represent Refrigerated CFLs

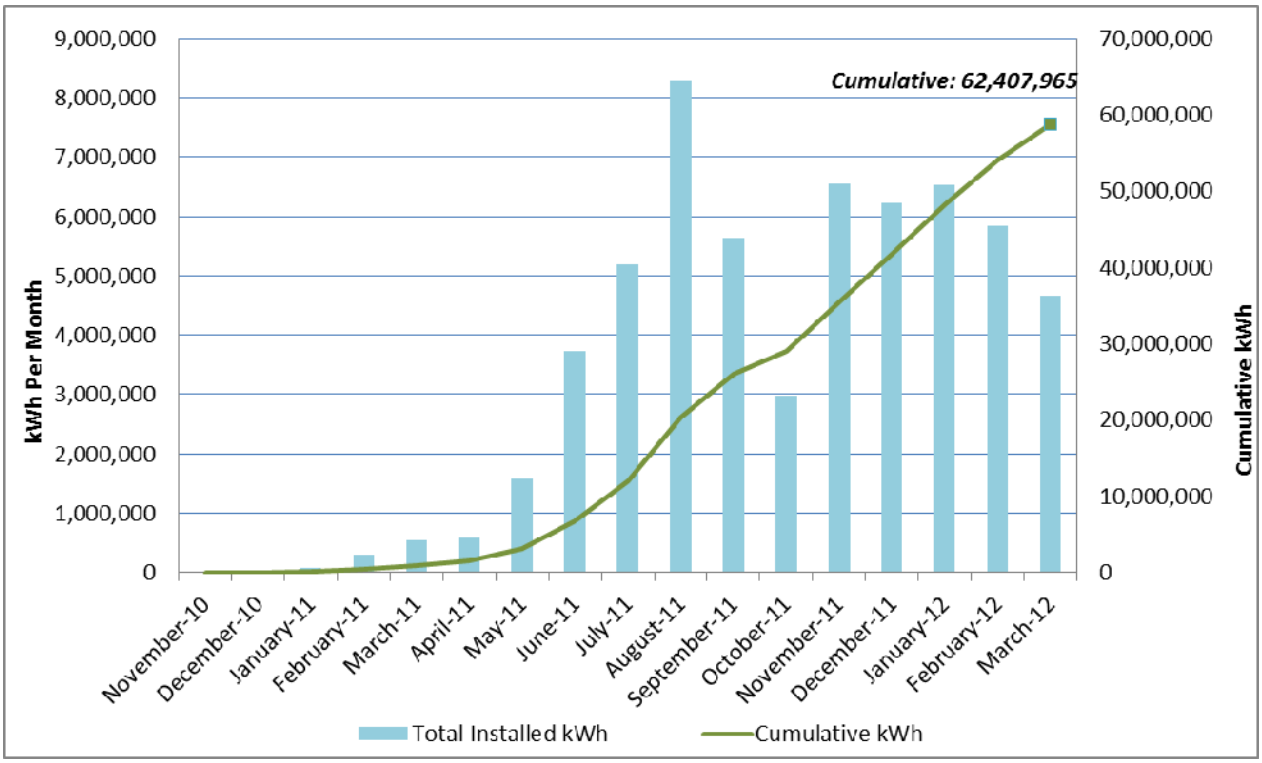
## A-6 Monthly Post Install Checks Completed



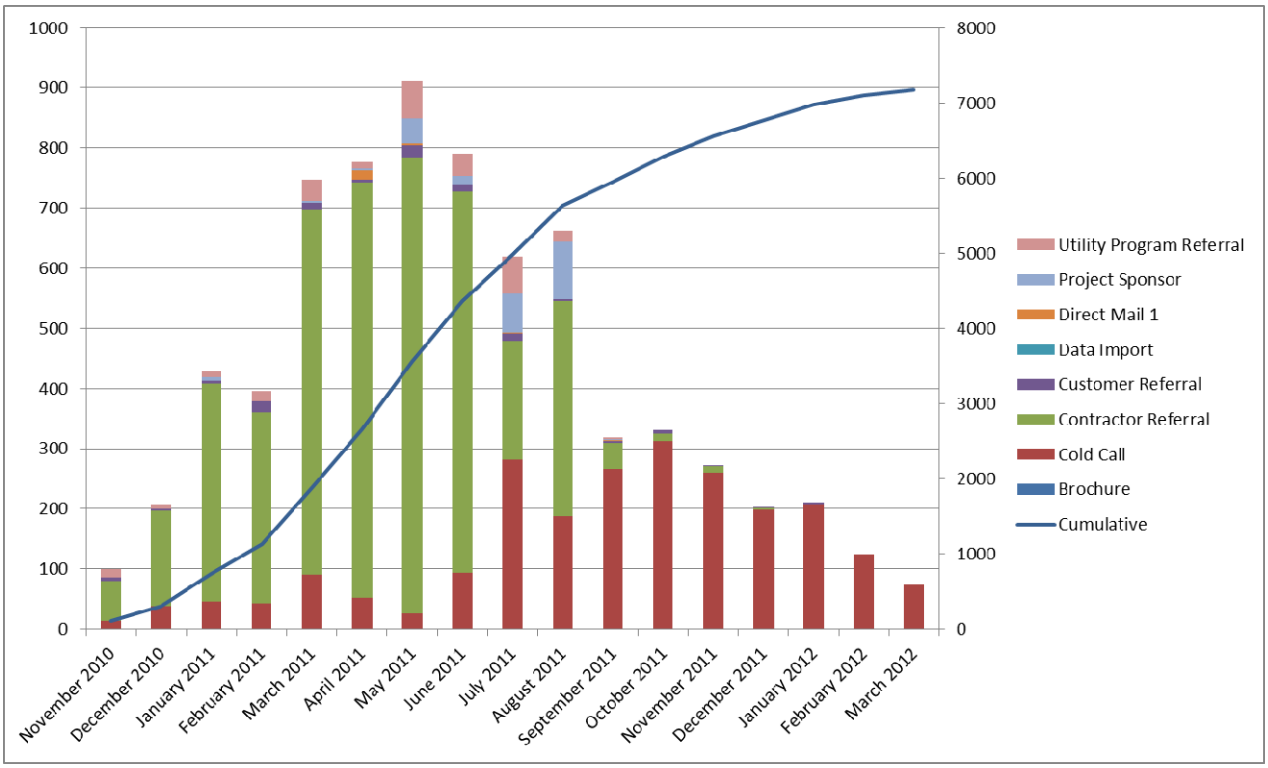
## A-7 Monthly Incentive Payments Paid



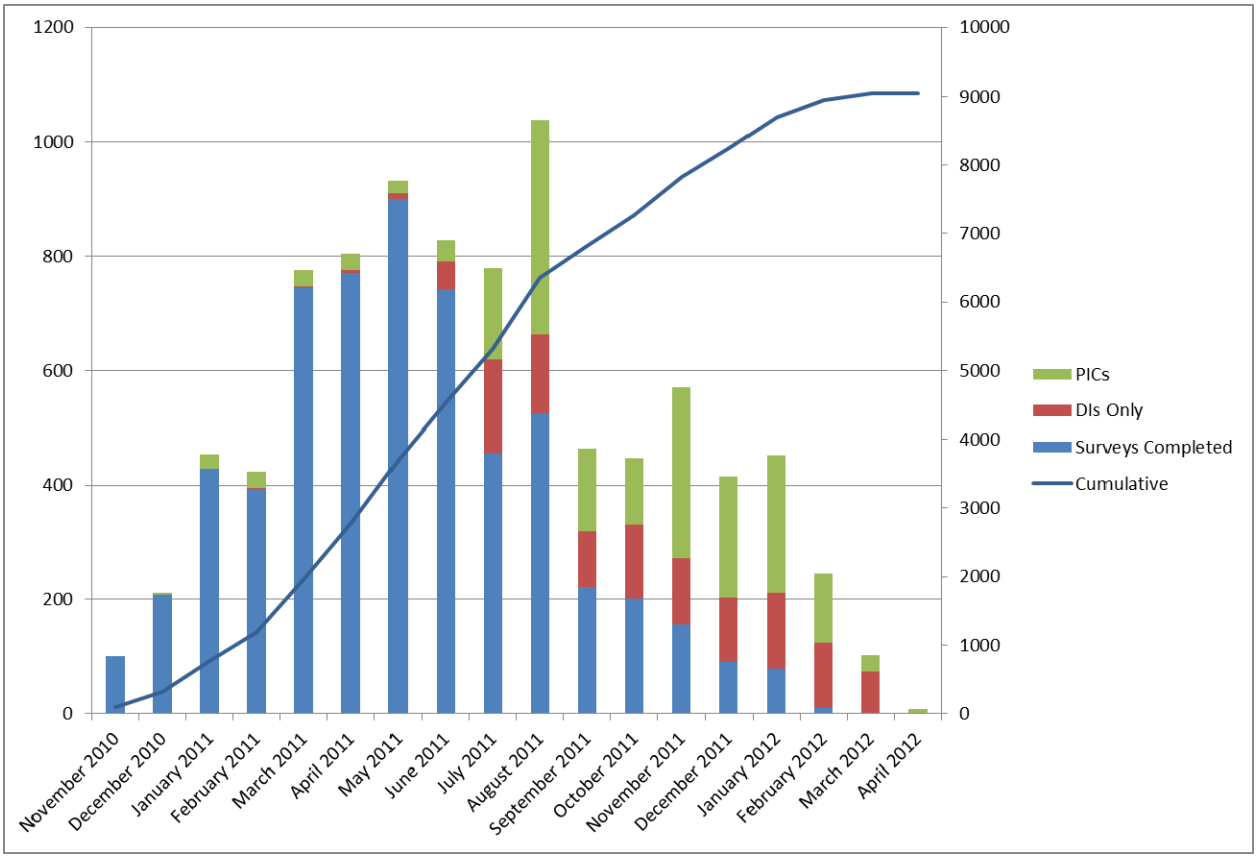
## A-8 Customer Electric Saving Realized



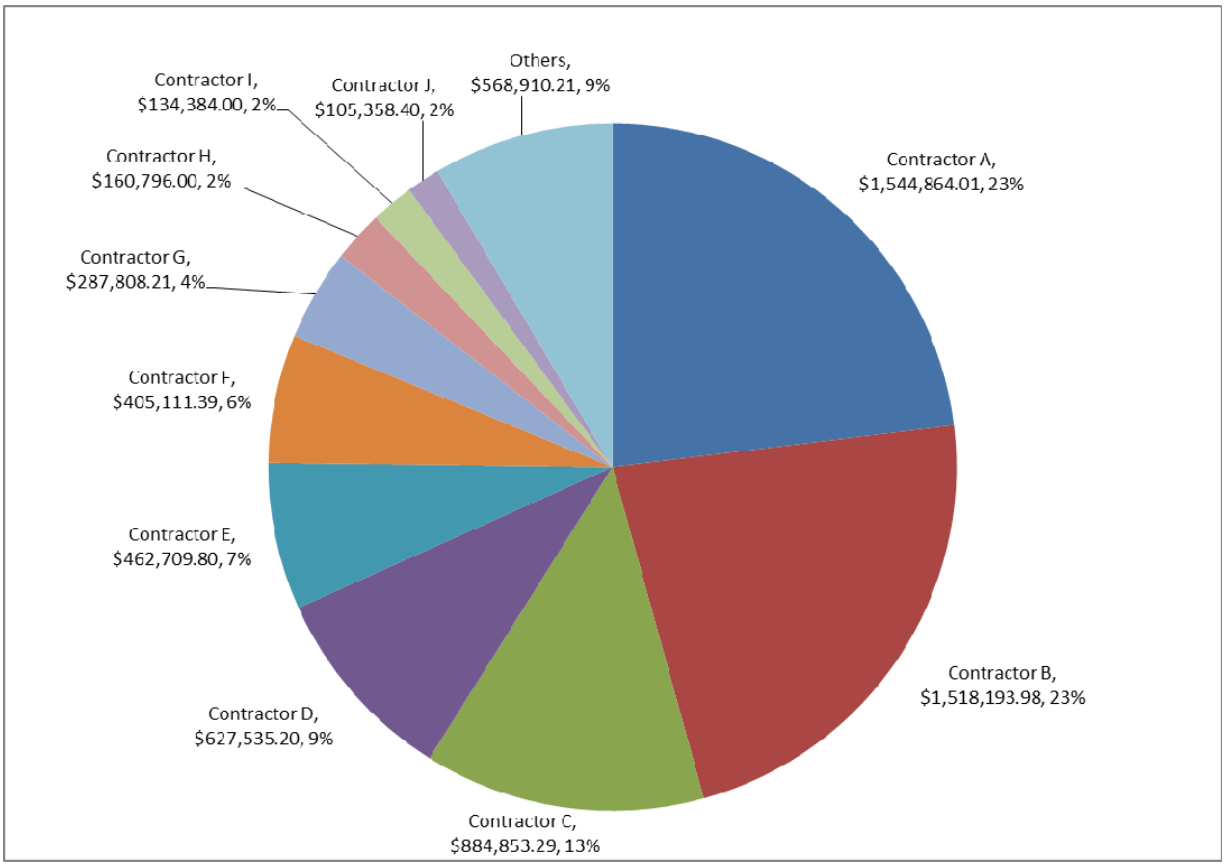
## A-9 Distinct Stores Visited by Source of Lead



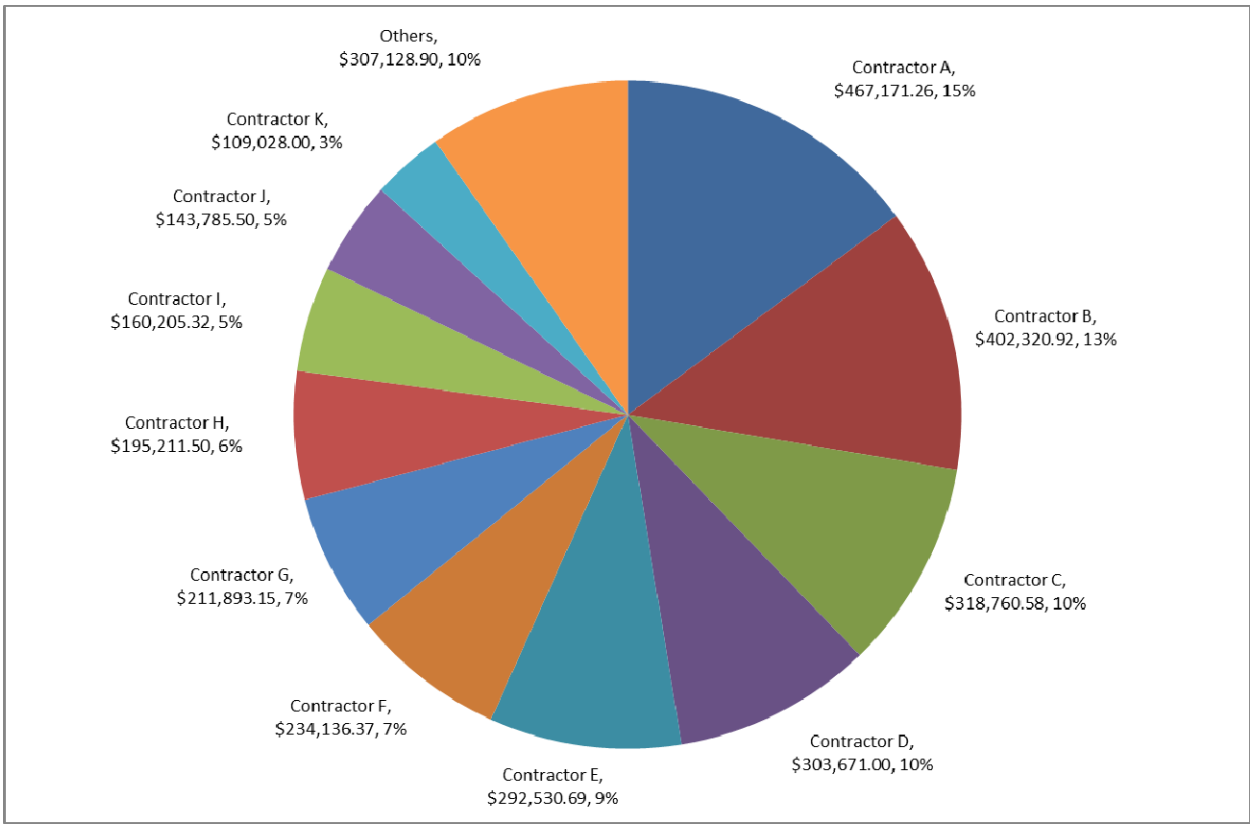
## A-10 Successful Store Visits by Activity



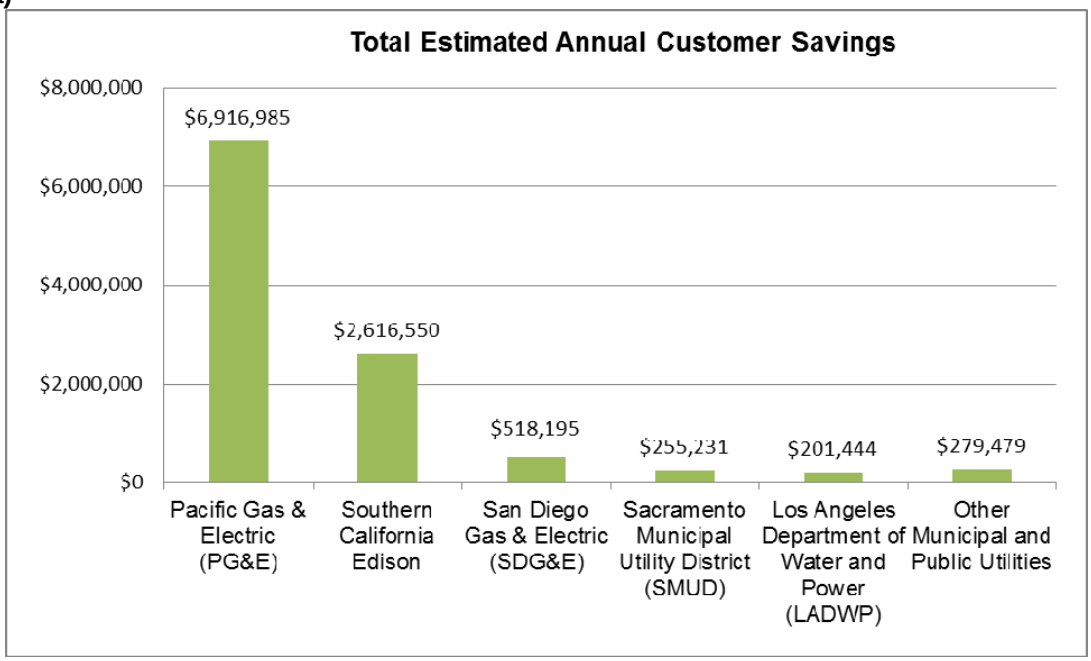
## A-11 Distribution of LED Projects by Participating Contractor



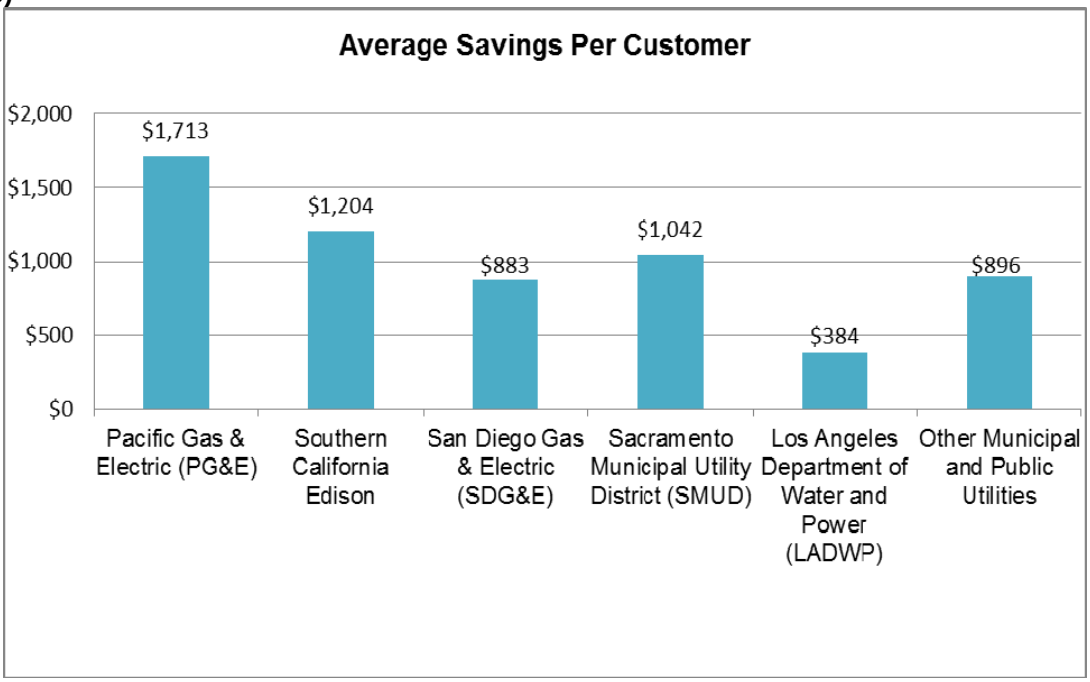
## A-12 Distribution of Controls Projects by Participating Contractor



**A-13(a)**




**A-13(b)**




**Savings calculated based upon 2010 average cost per kWh:**

| | |
|---|---|
| Pacific Gas & Electric (PG&E) | $0.18 |
| Southern California Edison | $0.17 |
| San Diego Gas & Electric (SDG&E) | $0.15 |
| Sacramento Municipal Utility District (SMUD) | $0.13 |
| Los Angeles Department of Water and Power (LADWP) | $0.14 |
| Other Municipal and Public Utilities | $0.17 |

Source: http://energyalmanac.ca.gov/electricity/index.html
Prices - Utility-wide Weighted Average Retail Electricity Prices.

## A-13(c) Summary of Utility Outcomes

| Utility | Surveys | Direct Install Visits | Projects | ESJ Funding | kWh Savings |
|---|---|---|---|---|---|
| Alameda Municipal Power* | 12 | 1 | 11 | $19,863 | 114,337 |
| Anaheim Public Utilities | 17 | 17 | 4 | $9,025 | 64,951 |
| Azusa Light & Water | 1 | 5 | - | $39 | 4,267 |
| Burbank Water and Power* | 29 | 22 | 6 | $13,710 | 96,372 |
| City of Palo Alto Utilities* | 5 | | 2 | $30,425 | 92,794 |
| Colton Public Utilities | 4 | 13 | - | $1,069 | 20,621 |
| Glendale Water and Power | 18 | 12 | 3 | $6,473 | 42,084 |
| Gridley Municipal Utility | 1 | | - | | |
| Imperial Irrigation District | 15 | 23 | - | $2,632 | 76,897 |
| Liberty Energy | 6 | 10 | - | $944 | 20,898 |
| Lodi Electric Utility* | 19 | 4 | 16 | $31,099 | 177,887 |
| Los Angeles Dept. of Water and Power | 458 | 439 | 85 | $191,028 | 1,481,203 |
| Merced Irrigation District | 1 | | 1 | $1,807 | 10,152 |
| Modesto Irrigation District | 12 | 46 | 1 | $29,335 | 224,623 |
| Moreno Valley Utility | | 2 | | $9 | 1,356 |
| Pacific Gas & Electric* | 3,420 | 1,668 | 2,370 | $6,703,970 | 38,005,412 |
| Pacific Power | 3 | 1 | - | $138 | 4,567 |
| Pasadena Water and Power | 5 | 5 | - | $159 | 8,806 |
| Redding Electric Utility | 3 | 7 | - | $126 | 17,575 |
| Riverside Public Utilities | 15 | 59 | - | $2,572 | 140,580 |
| Roseville Electric* | 15 | 1 | 11 | $27,816 | 169,886 |
| Sacramento Municipal Utility District* | 206 | 127 | 118 | $314,630 | 2,009,690 |
| San Diego Gas & Electric* | 284 | 435 | 152 | $476,414 | 3,549,282 |
| Silicon Valley Power* | 16 | 9 | 12 | $37,957 | 249,956 |
| Southern California Edison* | 1,453 | 1,547 | 627 | $2,196,754 | 15,667,965 |
| Truckee Donner Public Utility District* | 1 | | 1 | $2,076 | 11,088 |
| Turlock Irrigation District | 4 | 2 | 1 | $26,906 | 132,372 |
| Vernon Light and Power | 2 | 2 | 1 | $2,009 | 11,747 |
| **Total** | **6,025** | **4,457** | **3,422** | **$10,128,988** | **62,407,365** |